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ABSTRACT

Assembled to aid educators and administrators in Scotland in selecting and applying appropriate information retrieval systems in learning resources centers, this collection contains an introductory essay and four articles on the characteristics and features of some basic information retrieval systems. The articles include (1) a discussion of the Optical Coincidence Coordinate Indexing (OCCI) system in use at the Stantonbury Campus, Milton Keynes; (2) a consideration of the information retrieval techniques selected for use at the Media Resources Center (MRC) of the Inner London Education Authority (ILEA); (3) an analysis of some alternatives for use with small collections, especially mechanically-sortable notched-edge cards; and (4) a description of the dictionary catalog subject headings and entry formats used to handle books and other materials at John Smeaton High School in Leeds, England. Each article is accompanied by a set of diagrams and illustrations. A 22-item bibliography and an index are attached. (JL)

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THE SETTING UP OF A RESOURCES CENTRE

3 RETRIEVAL SYSTEMS

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FOREWORD

C.C.ROXBURGH.

While, as President of the Scottish Educational Film Association, I take pleasure in thanking the members of the Publications Working Party — and especially their convener — for the amount of work they have put into the preparation of Book III, I also welcome the opportunity of reminding readers of the reasons for publishing the series.

In 1972, teachers attending a highly successful S.E.F.A. Conference on "Resources Centres" expressed a clear desire for publications of a practical nature to help beginners in this field. Even before the Conference the idea of such publications had been considered. The Conference gave fresh impetus to the idea. There was so little then in print for either the beginner in resources management or the teacher having little contact with advisers or even for the experienced practitioner that the National Council of the Association was encouraged to put the scheme in hand. This series is not designed for specialists in libraries, managers of teachers' centres or similar experts. It has practising teachers in mind.

It was decided to publish five books under the title "Setting up a Resources Centre" and let them come out seriatim. While this has meant some extra cost to the purchaser, and perhaps some duplication, it has given readers access to the material as it has been prepared. It has also allowed adjustments to be made in subsequent publications. It was hoped that the books would be ready within a period of two years but there has been unexpected difficulty in persuading authors to part with their manuscripts. With the original time span in mind, indices and bibliographies were to be published with volume 5. However, the delay has required a change in this intention so each volume will have its own index and reading list.

The Association has tried to give the reader value for money, and has kept the publication price as low as possible. It is hoped that, as well as being attractive in price, the present volume will be full of interest to readers and particularly to teachers who have the responsibility of organising the management of resources. I commend it as well worthy of attention.

INTRODUCTION

NORMAN W. BESWICK.

One of the more unexpected effects of the British resource-based learning movement was a sharp upsurge of interest in classification and cataloguing. Teachers, media resources officers, self-styled educational technologists and school librarians began enquiring into recondite systems of indexing and buying (sometimes even reading) highly specialised books on information analysis and retrieval. Varieties of punched-card systems proliferated in departmental resources enclaves and school library resources centres. At conferences, passions ran high and proponents of different systems nearly came to blows. The Schools Council for Curriculum and Examinations gave public funds to a modest project to investigate the matter.[1] Visitors to established school resources centres began by returning home to order a set of optical coincidence cards before planning anything else (such as materials collection or curriculum discussions).

The contributors to the present volume both exemplify and usefully illuminate this surprising trend. It is noteworthy that Britain appears to be the only English-speaking country where such changes in learning mode have stimulated an indexer's bonanza. In America, of course, professional librarians were already firmly entrenched in schools when the new "media centres" were demanded; American librarians are indissolubly wedded to the dictionary catalogue and, wherever possible, to printed cards from centralised sources. But Mr Steveni is very definite that this would not have helped him; indeed, his discussions with librarians have led him to see them as a one-sided group "over-concerned with one type of solution". In particular, Mr Steveni looked at the target audience (his students) and defined them as having, not an inferior form of understanding to that of the teacher-indexers but a **different** form, which his experimental methods sought to reach and mould. No reader of his contribution will underestimate the amount of study and thought necessary before the Birmingham Polytechnic School of Art Education team arrived at its present solution. What is important to stress is that this project started, not because it was tackling a different medium or format, but because of a particular educational problem. Indeed, the solution, including not only Dewey numbers and edge-punched cards but microfiche and print-out facilities, is much more than an index as such, and would need drastic modification if it were to be employed for the retrieval of sound recordings, moving visuals, or three-dimensional formats.

Mr Grant, too, is preoccupied with the index as an educational tool. His description of the OCCI retrieval system at Stantonbury gives a very clear picture of what has been almost the orthodox view of many pioneer schools in the resources centre movement. What such centres recognised (as the early library classificationists also recognised) was the multi-dimensional nature of the universe of knowledge, as well as the multi-faceted nature of particular learning resources, book and non-book alike. One-dimensional display in a classified sequence brings like items together, but at the necessary cost of separating others with similar affinities. An index can overcome this, if it tries, and at a cost; and a thorough index can reveal to the enquirer a much wider range of potential sources of help to him than would immediately be apparent. The student is therefore brought into rapid contact with a range of resources; he experiences success rather than the discouragement of partial failure. Mr Grant's claim is that the OCCI system allows this to happen, with the additional bonus that the mode of operation has itself an educational effect, forcing the enquirer to articulate the facets of his request rather than tamely trotting along to a likely section of shelves and staring hopefully at them.

It will be apparent from Mr Grant's examples that the material he is often concerned to index is not necessarily "audio-visual", it could be a poem in a book. It is not the nature of the format so much as the means of access that is the key factor. The "features" or facets which Mr Grant selects in his Bushman poem example are not parts of one composite subject, such as we shall meet when we examine Mr Ferris' "PRECIS strings", but different approaches to the same item from a variety of vantage points. To index a poem from a book is itself an example of what is called "analytical indexing", and the famous paragraph Mr Grant quotes from the General Studies Project's pamphlet, about the book on football, calls for a very full treatment amounting to saturation indexing. Simple sums will be enough to convince even the most convinced advocate of OCCI that to apply this procedure to all items in the collection would be impossibly expensive of time, and most resources centres are content to base their indexing selectively on the prevailing curriculum and its current (and perhaps ephemeral) requirements. This hardly helps to stimulate open-ended and unpredictable enquiry, or to assist teachers in preparation of new themes, but it is an example of how OCCI users are concerned mainly with the index as a means of guiding and stimulating students in planned sequences rather than with the traditional goals of indexing as such.

1. See: *School resource centres: Schools Council Working Paper 43, Beswick, Evans/Methuen Educational, 1972.*

Mr Ferris, a senior indexer at a conventional audio-visual library aimed at providing a standing exhibition of AV resources for teachers to inspect, is understandably less pre-occupied with carrying out an educationally improving function. The ILEA Media Resource Centre's meticulous descriptive cataloguing is rightly renowned (although one is surprised to find no mention of playing-time in his examples). Their decision to arrange all material in Dewey order on shelves (albeit in ten format sequences) enables an enquirer to go with some confidence to one place to find at least something to help his quest (this is not the case with OCCI if items are kept in accession number order), and it is useful to be reminded that once printed-card services become available for commercially-published audio-visual items, complementing those already available from BNB for books, school librarians may be spared part of their housekeeping chores,somewhat after the American pattern. OCCI indexers of course will still be looking for thematic relevances and analytical entries to bring out, but Mr Ferris' clientele have unpredictable demands which it would be wholly uneconomic to anticipate in such detail. The PRECIS strings which Mr Ferris describes are certainly a flexible and helpful tool for the subject indexer, and worth the school librarian's time in investigation; what they do not cater for however is the problem found by Mr Steveni, that the enquirer's approach may be different, i.e. involve a different conceptual structure, to that employed by the conventional indexer.

It may be worth dwelling on this for a moment as a preliminary to Miss Trout's paper. The MRC item on space flight will certainly help the enquirer who approaches the subject from the viewpoints of Moon, Space Flight, Manned space flight, and Apollo; the PRECIS index does not however help the person who begins his search thinking of Voyages, or Exploration, or Adventure. He has to think of the Apollo moonshot for himself. This may, educationally, be a good thing for him to have to do, and perhaps Mr Grant underestimates the amount of conceptualising that has to go on with conventional card-catalogue systems; but it indicates that PRECIS is not itself the answer to the challenges laid down by the earlier papers. Most catalogues, classification schemes, indexes and headings lists impose a particular view of knowledge on the user, which he must learn and absorb; the effects of this on the student's formation of concepts and systems would be interesting to examine in research. Mr Steveni admits that his own system has indoctrination as almost an overt function, and many an OCCI features list embodies its own hidden curriculum.

Miss Trout, indomitably beginning again like Bruce's spider after an unhappy disaster, is solidly convinced of the soundness of her own system, a British and happily pragmatic version of the dictionary catalogue, based upon the observed terminology of the students in her school. The combination of a Dewey shelf location and an alphabetical subject heading index allows for the virtues of browsing as well as for catalogue research, and Miss Trout is sensible to permit herself added subject headings for items which clearly demand them. (There is a quaint idea in some quarters still that a card catalogue can have only one subject entry per item; this negates one of the card catalogue's major advantages). Like our other contributors, she finds her system "works well" for the needs of her school, and although there must always be problems in the maintenance of a 1500-term thesaurus these are nothing compared to the problems involved for OCCI users in trying to cover the whole universe of knowledge with up to 500 permutated terms. It is rare, nonetheless, for a dictionary catalogue to be able to employ effectively the kind of rotation of facets which Mr Ferris manipulates with his PRECIS system; thus one is more likely to be able to find, through the catalogue all the items relevant to an object or practice than to a place or particularly a period.

The Schools Council Resource Centre Project investigated such matters in considerable depth in its six pilot schools, and my conclusions are analysed in well over 350 pages in the final report.[2] This is not the place to rehearse the arguments again, and the reader is invited to consult the book if he is interested after reading the four accounts in this current volume. There have been, over the last half-dozen years, rather too many hasty decisions and impulsive assertions on this matter, and one hopes that the pages to come will illustrate not only the variety of possible objectives for an indexing system but also the complexity of theory that lies behind the practice. The history of school libraries is well littered with hastily improvised amateur schemes, as well as with unthinkingly applied conventional systems, and this is not an activity into which the uninitiated should venture without care. Equally, as Mr Steveni perhaps reminds us, it is important to look again at "received wisdom", with the single comment that, in times of economy, it is often useful to be able to fall back on systems which have a broad base of continuing and publicly available revision. But now let our authors speak.

2. See: *Organising resources: six case studies*, Beswick. Heinemann Educational, 1975.

THE OCCI RETRIEVAL SYSTEM AT STANTONBURY CAMPUS, MILTON KEYNES

MIKE GRANT

For many years, the Library has been the major source of reference in a school, providing, through its classification system, a travellers' guide to its volumes. Simple and reliable, it has enabled books to be presented on shelves in a linear display of knowledge, or in the case of fiction, by an alphabetical arrangement of authors, so that pupils can browse in a section relevant to their study, or move easily to find a favourite author in the fiction section. However, recent developments in teaching and learning strategies have demanded a little more in the way of retrieval information.

Firstly, the book is no longer recognised as the sole learning resource which should be collected in a school library. Other media are now readily available, including slides and film strips, audio and video tapes, newspaper and magazine articles and even three dimensional objects. Thus, there has been a great increase in the range of learning materials as teachers see new ways of presenting information.

Secondly, because of the need to deal with mixed ability groups, or simply as a new philosophical approach to the learning process, there has been a marked increase in the use of individual learning, calling for a response from the pupil in the form of what, at a higher level, might be termed "research". He is expected to use resources to which he is guided or which he is allowed to "discover", in developing his knowledge of a subject.

Thirdly, it has become apparent that, while a book or any other resource could be classified quite correctly under one single heading, it may contain references which would be highly applicable to study under another heading. Let me quote here from a pamphlet entitled "Resources Centres" which was an early publication from the Schools Council's General Studies project.

> "- - - - - there is a book in York Public Library called "A History of Football". It is classified by the Librarian very reasonably as 796.334 (i.e. Sports and pastimes Association Football) but the book is not only about football. It is also about history and religion and education and literature and newspapers and many other matters of potential interest to pupils and teachers. And it has in it, a misericord in Gloucester Cathedral, a seventeenth Century engraving of the Piazza of Santa Groce in Florence, and many other plates that give good evidence about styles of dress in a variety of periods up to the 1950's - - -"

This all adds up to the fact that, when we become aware that many resources can be used in a great variety of ways, the harnessing of the vast amount of information which this makes available takes on a new, significant dimension. It is not surprising therefore that retrieval systems have been under close scrutiny in the last decade, resulting, unfortunately, in conflict which often smacks of vested interest rather than genuine research on the suitability and reliability of such a system in a school environment.

Some doubt has been expressed of the ability of conventional library systems to cope with modern needs, and it is the purpose of this article to describe an alternative system. This is a method of indexing rather than classifying, and it has been used in several hundred educational institutions with varied success, often working side by side with the Library classification system and in no way attempting to replace it. It is called Optical Coincidence Co-ordinate Indexing, to give it its full title, although it is sometimes known as the "Peek-a-boo system" because of the nature of its operation. It is however far better known simply as "OCCI".

Its advantages as I see them are five in number. Firstly, it allows for fine cross reference, and thus allows the greatest possible use of a resource. Secondly, it allows for decentralisation of resources material which in effect means that one can refer to materials, not only anywhere in the school, but also outside it. Thirdly, it is simple for a child to operate, although I recognise that this is a matter of opinion, a point I shall discuss later. Fourthly, there is possibly an educational "by product", in that a child, to operate it effectively, has to synthesize to some degree what he wants to find out. Fifthly, it is a system which can handle any form of media.

Its disadvantages, and I hasten to add that at no time would I treat these lightly, are, firstly that to create it and maintain it needs an expenditure of labour which few teachers on their own can sustain. Secondly, whilst not absolutely necessary, the presence of reprographic machinery facilitates maintenance. Thirdly, it demands from members of staff co-operation in "feeding" it, and an ability to see beyond the boundaries of their subject when they are featuring material.

It is, basically, a punched card system, which has been used successfully in industry as a method of data retrieval for several years. Its backbone is a "feature list". This is a list of the "categories" or "features" of resources which are relevant to the school curriculum. It provides answers to three main retrieval questions, which are, possibly, common to all features lists. These questions are:—

What is it?
Where is it?
What is it about?

Under the first heading, the main question to be answered is the actual format of the resource. This reflects the items that a school might see itself collecting. For instance, video tapes would not appear unless a school could see itself seriously setting up a video tape bank.

Under the second heading, the question "Where is it?" presupposes that the material could be anywhere in the Centre, or anywhere in the school, or anywhere outside the school.

The third heading could have four parts to the main question "What is it about?" and these are:

What periods?
What places?
What curriculum subjects?
What topics or themes?

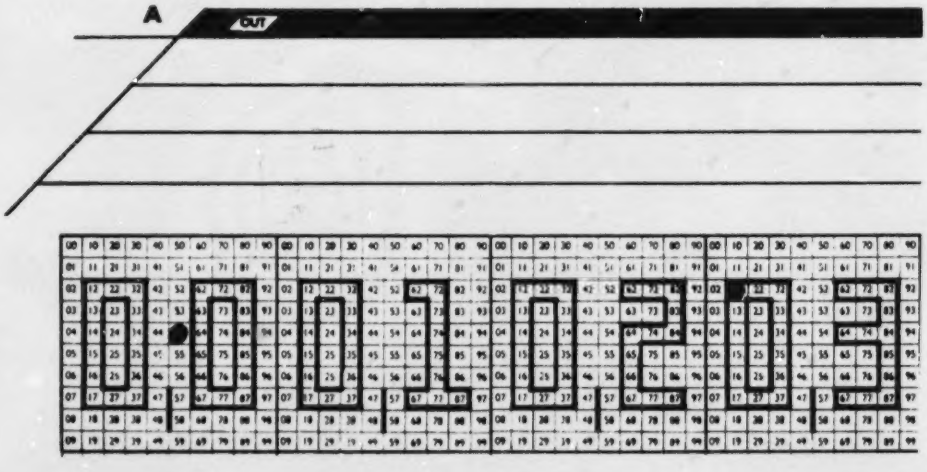
The first part reflects a time scale from pre-history to the future. The second part represents the world divided up into convenient sections (which could be detailed enough to cope with local geography if necessary). The third part is a reflection of the school curriculum, and all the timetable subjects and link courses should appear under it. The final list can be as exhaustive as one would want to make it, but if the feature lists which I have given as examples are examined, the reader will see that in general they contain words which have a wide application, many being able to be used in conjunction with others.

Feature lists vary in length from a single sheet to three full sheets, and it would be foolish to try to present an optimum size, as each list will vary according to the needs of the school drawing it up. More often than not, feature lists tend to be heavily weighted towards the humanities, possibly because it is this area of the school curriculum which has expressed the greatest need for resources. Ideally the list should cover all subjects, and one way of ensuring that it does, is to ask Heads of various disciplines for a list of "key words" under which they feel the resources relating to their departments could be indexed. At Codsall School, a development from the main index was the setting up of Faculty OCCI sets with appropriate feature lists [1].

The headings of the feature list are entered on large cards which are housed in a box in sections in the same order as the list. It is possible to make these boxes in school, but they rarely come up to the standard of the manufactured variety. However, the main aim of presentation is to make sure that each card can be seen and retrieved easily.

The cards themselves vary in texture, some being plastic-coated, but all are overprinted with a series of small squares, usually laid out in a larger grid square pattern, and all numbered in such a way that each square can be identified easily. The total number of squares varies according to the card used, but most schools use those containing either 5,400 or 10,000 squares. These cards, then, are the vehicle for the indexing process, and in the case of the 5,400 variety can handle that number of items. Once the set is used up i.e. 5,400 items are in the collection, then a second series can be started.

Indexing is carried out by punching small holes at appropriate points, the reference being that number which has been punched out. In the illustration below, the hole punched out on the left hand side reads '0054'. The first pair of figures, 00, comes from the large reference number in the grid, the second pair, 54, from the number of the small square that has been punched out. The right hand reference reads 0312.



1. See: ***Resources Centres*, Mitson and Holder, 1975.**

What is the method of selecting the number to be punched? Every resource item which is to be indexed is given a number. At the beginning of the whole scheme, the first item would be given the number 0000 — that is the reference of the first little square on the card. The second item would be 0001, the third 0002, the fourth 0003 and so on in sequential order. These numbers are referred to as the accession numbers.

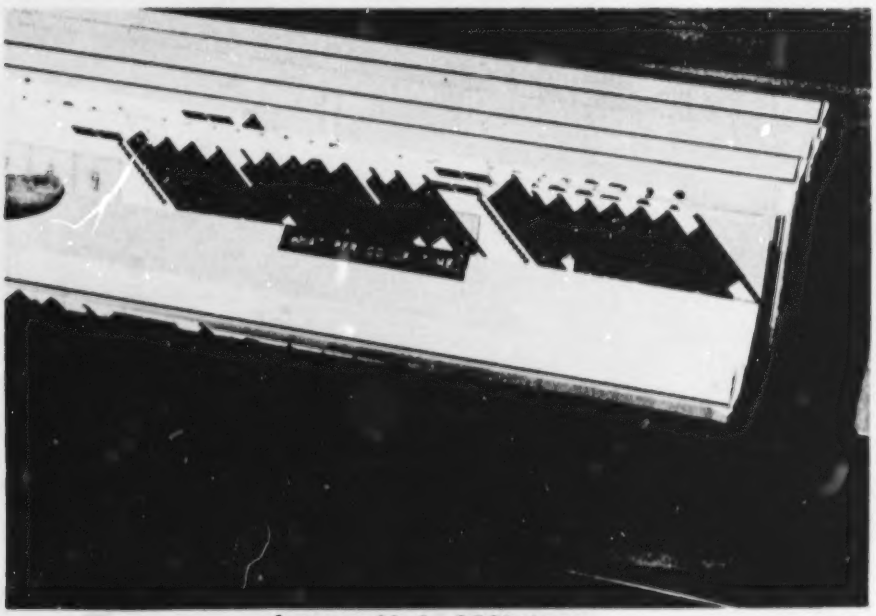
Let us suppose that we have a poem written by a Bushman. It is contained in a book of Poems entitled **Poetry across the World.** It is agreed by the Humanities Department that this is a resource which would be highly relevant to pupils working on Primitive Communities, a subject appearing in the First Year syllabus.

A feature list must be completed — which means ticking those features on the list that are relevant. Taking a typical feature list, the following might be ticked:—

What sort of item is it?	Book
Where is it? (geographical location)	Africa, South
What timetable subject?	Humanities English
What topics or themes?	Death Deserts Folklore Life Mystic Primitive Communities Survival

The item is the eighty seventh to be accessioned and therefore is given the four figure reference 0087. The eleven cards with the headings chosen as above are withdrawn from the box, and all are punched at square 0087. They are then replaced in the box in their original order.

The next stage is the translation of that number into an index. The design of the index sheet is obviously a matter of individual preference, and I give as an example one of the type used at Stantonbury.



A storage bin for OCCI sheets.

REFERENCE TO **A BOOK OR PAMPHLET** DEWEY NO. 808.81 BANK NO. 0087

AUTHOR	DATE OF EDITION
V. DEARIE	1975
TITLE	
POETRY ACROSS THE WORLD	
PUBLISHER	**SECTION OR CHAPTER**
STANTONBURY PRESS	PAGE 81.

TEXT OF REFERENCE

Poem reputedly written by a bushman. He explains about the signs bushmen look for in the search for their gods. He talks about the power of the mantis and refers to the story of the ostrich which the bushmen believe to be very forgetful. There are also references to life and death.

AVAILABILITY LIBRARY: DEWEY NO: 808.81

The function of the index sheet can be twofold. It presents the pupil either with the actual item — in this case, a copy of the poem — or, as in the majority of cases, with a reference to the book of poems stating the page on which the item can be found; a description of the item itself; and finally where in the total collection of resources it can be found — in this case a reference to the school library, giving the reference number of the book and the shelf.

I have found that one hundred index sheets make a convenient volume. Each large grid square thus relates to one volume. It is worthwhile producing a duplicate volume, so enabling two pupils to work through the same series of 100 items at the same time. These volumes are often known as the Accessions Registers.

Let us take a closer look at these two pupils. The first is studying the Bushmen of the Kalahari Desert. He selects from the OCCI box the following cards:

Africa, South
Desert
Primitive Communities

These cards, on their own, would each display a series of holes that would bear little relation to each other. However, if they are stacked together on a light box, then pin pricks of light could appear at several points — and certainly at 0087. Our first pupil would retrieve, as part of his haul, the Bushman Poem.

The second pupil is writing an essay on the various ways in which death is portrayed in Folklore. He selects from the OCCI box two cards — Folklore and Death, and he also would retrieve 0087, the poem in which he would find relevant information on the Bushman interpretation of death taken from Legend.

The selection of the correct feature cards by the pupil is of course critical. Amongst the critics of OCCI, there are those who question the ability of average children to synthesize in this way, and undoubtedly some children will need support and guidance. I have been surprised continually how well children can carry out this operation, and as I stated earlier, I believe that using the system provides a valuable learning exercise. Of course, it is not necessary always to select more than one card. Thus the single feature card "pollution" will itemise all the resources accessioned on pollution. Refinement comes when selecting, along with "pollution", the cards for "Scotland", and "1973".

There are several other points which should be dealt with. Firstly there are various methods of punching holes in the cards, ranging from a small punch made to be held in the hand (and definitely not to be used the morning after the night before!) to its much larger tabletop counterpart. While it also is operated by hand, it is far less of a strain to use. There are also various mechanically operated drills, which allow several cards to be punched simultaneously, but these are more expensive and it is questionable whether or not several cards can be dealt with together accurately. Secondly — a question that is often asked — with more than 500 feature cards, is it possible to train children to put cards back into the container in their correct sequence? The answer is that, for most of the time it is, but there are going to be occasions when cards are put back into the wrong trays, or slip behind one another so that they cannot be found easily. In order to prevent the latter mishap, the cards have notches along their bottom edge. These notches fit over rails fixed to the bottom of the cabinet and so cannot slip sideways. However, they can still be put directly behind another card by a careless user, and it is therefore important to devise a system which allows the Librarian to scan the trays quickly and spot immediately a misplaced card. One suggestion is to colour-code each row, either directly under the A on the viscan card [2] or where the word "out" appears on that card. In this way, a card will stand out immediately if it is in the wrong row. We also add the row number of the card, so that, having located the row, a child is able to select the right position for the card in the row.

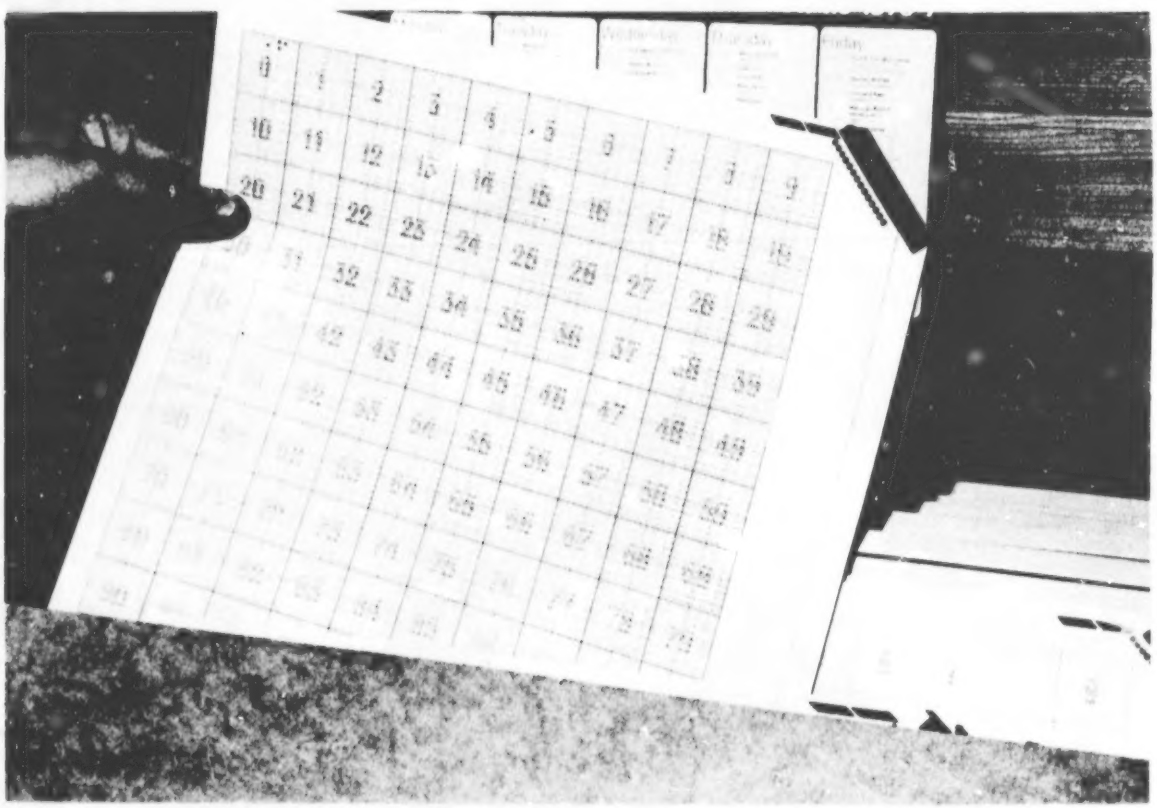
A final point on the selection of material to be accessioned is that ephemeral materials should be avoided at all costs. For instance, if one were to index all the reference material which has appeared in the press and magazines on the Northern Ireland Crisis, not only would one be overwhelmed by the amount of material, but a great deal of it would be of little interest six months later. Perhaps one article which dealt objectively with the growth of the crisis situation, giving clear and concise background notes, would be accepted for accession — the criterion being that, in the judgement of the accessioners, that article would be relevant in six years' time, rather than obsolete after six months. This does not, however, prevent the accession of a "topic box" on Northern Ireland which would contain ephemera, and could be added to over the months — the whole point being that it would take up only a single accession number.

2 see: illustration on page 2

Similarly, I would hesitate to recommend that all books should be accessioned into the system. I think it essential that children should learn how to use a library, including the conventional method of classification to be found in the public libraries. Books or parts of books which could be accessioned into OCCI are those which, in the judgement of the accessioners, would not be retrieved easily by the average child. In the light of this, it is essential that Librarians are invited either to departmental or Faculty planning meetings, or are, at least, informed of proposed syllabuses so that they can look for relevant material in good time. It is possible to accession book lists, and thus by adding an item card "book list" and matching it with a feature card e.g. China, a book list on China would be retrieved.

To those who fear that a hole punched in the wrong place is irreparable, despair not! The manufacturers supply a puncture outfit!

Summing up, this is a system which, for the user, provides a simple, but quick method of retrieval of multi-media information, based on the selection of features which make up the topic he is seeking. For the Resources Library, it is a system which offers fine cross referencing, and the total exploitation of the many aspects of data in all its forms, together with the possibility of decentralisation of that material. For the people who set it up and maintain it, it is a system which will require hard work to accession even the simplest of items. It thus depends very much on the circumstances in each individual school whether or not the time and energy needed to operate an optical co-ordinate index should be expended, a question which only the school can answer.



An OCCI sheet showing holes drilled to correspond with accession numbers.

FEATURE LIST

Originator	Punched	Number	Metal Plate Made	Class Set Available
		0087		

WHAT SORT OF ITEM IS IT?

FORM

Apparatus	Film	Microfiche	Picture	Syllabus
Artefact	Filmstrip	Microfilm	Place	Tape Audio
Catalogue	Gramophone Record	Newspaper Cutting	Poster	Tape Visual
Cineloop	Guide	Note	Questionnaire	Text
Diagram	Jackdaw Pack	Organisations	Sheet Music	Transparency
Exam Paper	Magazine/Periodical	Pamphlet	Slides	Booklist
	Map	Person	Specimen	

ORIGIN

Before 1900	1940-1945	1965-1968	1971	1974
1900-1939	1946-1960	1969	1972	1975
	1961-1965	1970	1973	

FOR WHOM IS IT SUITABLE?

Foundation Year	3rd Year	4th Year	5th/6th Year	
Staff	Progress	All Years		

WHERE IS IT?

CENTRAL RESOURCE AREA

Library
Pamphlet Boxes
Periodicals Collections
Archives Room
Video Tape Bank
Audio Tape Bank
Microfiche Collection
Microfilm Collection
Slide Collection
Film Strip Collection
Films
Science Wing
Technology Wing

FACULTIES

Recreational Studies
Creative Studies
"Man in Time and Place"
European Studies
Scientific Studies
Mathematical Studies

DEPARTMENTS

Drama
Progress
Music

BRIDGEWATER HALL

Lower School Resource Centre
Upper School Resource Centre

OUTSIDE SOURCES

Milton Keynes Development Corporation
N. Bucks Teachers Centre
Milton Keynes College of Edn.
Open University
Other Schools
Other Universities/Colleges
District Libraries
County Hall Aylesbury
Schools Council Projects
Other Sources

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WHAT IS IT ABOUT?

WHAT PERIODS?

Prehistory (General)
Stone Age
Bronze Age
Iron Age
Before 499 BC
500 BC - 49 BC
50 BC - 449 AD (Roman Britain)
450 AD - 1065 (Dark Ages)
1066-1484 (Middle Ages)
1485-1603 (Tudors)
1604-1713 (Stuarts)
1714-1814 (Hanoverians)
19th Century
1900-1918
1919-1945
1946-1959
1960-1969
1970-1971
1971-1972
1972-1973
1973-1974
1974-1975
1975-1976
Future

WHAT PLACES?

World
Britain OR
England OR
South East OR
Buckinghamshire
Milton Keynes
London
South West
East Midlands
West Midlands
North West
Yorks & Humberside
North East
Scotland
Wales
Northern Ireland
Southern Ireland
Other Islands

Europe OR
Austria
Benelux
East Europe
France
East Germany
West Germany
Greece
Italy
Portugal
Scandinavia
Spain
Switzerland
EEC
NATO
EFTA
Warsaw Pact

Africa OR
Central Africa
East Africa
North Africa
South Africa
West Africa

The Americas OR
Canada
Central America
South America
USA
Mexico

Middle East OR
Cyprus
Egypt
Iran (Persia)
Iraq
Israel
Jordan
Lebanon
Libya
Morocco
Persian Gulf
Saudi Arabia
Syria
Turkey
CENTO

Asia OR
USSR (Soviet Russia)
Communist China
Nationalist China
India & Ceylon
Pakistan
North Korea
South Korea
Japan

South East Asia OR
North Vietnam
South Vietnam
Laos
Cambodia
Thailand
Malaysia
Burma
Singapore
SEATO

Australasia
New Zealand
Polynesia

Arctic
Antarctic
Seas
Oceans

Space OR
Mars
Moon
Sun
Venus
Other Planets

WHAT TIMETABLE SUBJECTS?

Art
Automobile Engineering
Basic Science
Biology: Animal
Human
Marine
Plant
Biochemistry
Business Studies: Bookkeeping
Shorthand
Typing
Careers
Catering/Cooking Science
Chemistry
Classical Languages
Commerce (Business Studies)
Computer Studies
Current Affairs
Design
Drama
Economics
Engineering Science
English: Language
Literature
Environmental Studies
European Studies
French
Games
General Science
General Studies
Geography
German
Gymnastics
History
Home Economics
Italian
Mathematics
Metalwork
Modern Languages not listed
Music
Needlework
Outdoor Activities
Physical Education
Physics
Physical Science
Pottery
Religious Education
Rural Studies
Science (other than listed)
Sculpture
Social Studies
Technical Drawing
Technology
Urban Studies

WHAT SUBJECT, TOPIC OR THEME?

Accountancy
Adult
Advertising
Aeronautics
Agriculture
Aid
Air
Age
Agencies
Amphibians
Anatomy
Animals
Analysis
Apartheid
Apostle
Apparatus
Applied
Archaeology
Architecture
Armed Forces
Arrangement
Art
Assessment
Astronomy
Atheism
Atmosphere
Attitudes
Authority
Automation
Bacteria
Bakery
Balance
Ballet
Battle
Beverages
Bible
Biography
Birds
Birth
Blood
Brick
Bridges
Broadcasting
Building
Camping
Canals
Capital Cities
Careers
Carpentry
Cartoon
Censorship
Ceramics
Changes
Chemistry
Chemical
Choreography
Christianity
Christmas
Church
Cinema
Civilisations
  Ancient
  Modern
Class
Climate
Clothes
Coal
Colour
Combustion
Commonwealth
Communications
Community
Computers
Concerto
Conflict
Congestion
Conquerors
Conservation
Construction
Consumption/
  Consumer
Control
Cookery
Co-operation
Cosmetic
Costume
Countryside
Courage
Creative/Creation
Credit
Crime
Criticism
Crops
Cultivators/
  Cultivation
Culture
Currency
Cybernetics
Dance
Death
Decoration
Deep Freezing
Demonstration
Dependence
Descriptive/
  Description
Development
Deviance
Design
Disaster
Disciple
Disease
Disobedience
Dissent
Distribution
Diving
Drama
Drainage
Drawing
Dreams
Dress
Drink
Drugs
Dynamics
Earth
Ecology
Economy
Economic/s
Education
Eggs
Electricity
Electronics
Electrostatics
Emigration
Emotions
Energy/Power
Entertainments
Environment
Equipment
Essay/Essayists
Establishment
  Anti/Pro
Evil
Evolution
Examination
Exploration
Eye
Factories
Faith
Family
Fashion
Father
Fear/Danger
Females
Fibres
Films
Finance
Fire
Fish
Fitting
Fluids
Folklore
Food
Football
Forestry
Foundry
Freedom
Fruit
Fuel
Fungi
Furniture
Gambling
Games
Gears
Generation
Genetics
Geology
Germination
Glaciers
Glands
Glass
God
Government
  Local
  Central
Grammar
Groups
Growth
Hate
Health
Heat
Heaven/Hell
Hope
House
Human
Humour
Hunger
Hunters
Hydraulics
Hydrosphere
Ideology
Immigration
Income
Industrial Relations
Industry
Infection
Inorganic
Insects
International
Instrument
Inventors
Invertebrates
Investment
Irresponsibility
Jazz
Jesus
Jewellery
Joinery
Justice
Kings/Rulers
Land
Language
Law
Leader
Learning
Leisure
Liberators

Light
Liquids
Literacy
Literature
Lithosphere
Living Conditions
Locations
Love
Loyalty
Machine(s)
Magnetism
Males
Mammals
Manmade
Markets/Marketing
Marriage
Martyrs
Materials
Matter
Meat
Mechanics
Medicine
Metal
Metrication
Microbes
Migration
Milk
Minerals
Mining
Minorities
Miracles
Missionaries
Models
Molecules
Money
Morals
Motivation
Mother
Motor
Mountains
Movements
Music
Myth
Natural Resources
Nerves
Noise
Novels
Nuclear
Numbers
Nursing
Occult
Old People
Opera
Optics
Orchestra
Organic
Organism
Painting
Pastoralists
Patience
Pattern
Philosophy
Photography
Physical
Physiology
Pilgrim
Pioneers
Planning
Plants
Plumbing
Poetry
Police
Politics
Pollution
Pop
Popular Arts
Population
Ports
Poverty
Power
Prediction
Prejudice
Preservation
Press
Primitive Societies
Prisons
Processing
Products
Property
Propaganda
Prophets
Prosperity
Protector
Protest
Protozoa
Psychology
Public
Publicity
Punishment
Pure
Quantities
Race
Radiation
Radio
Rail
Recreation
Relations
Religions
Reproduction
Reptiles
Research
Revolutions
Rituals
River
Rules
Safety
Sailing & Canoeing
Savings
School
Sculpture
Sea
Seasons
Security
Senses
Service
Sex
Sin
Slavery
Social Services
Sociology
Soil
Solids
Solutions
Song
Sound
Sports
State
Statistics
Steam
Strength
Stress
Structure/Structural
Suffering
Superstition
Surgery
Surveying
Symbols
Symphony
Synthesis
Tailoring
Taxation
Teaching
Techniques/Technology
Telecommunications
Television
Tension
Textile
Theatre
Theory
Thermodynamics
Tides/Tidal
Tobacco
Tolerance
Tools & Weapons
Towns
Trade
Tradition
Transport/Travel
Trees
Ultrasonics
United Nations
University
Vehicle
Vertebrates
Vibrations
Village
Violence
Virus
Vocal
Vocations
Volume
War
Water
Waves
Weather
Welding
Wild
Wire
Wisdom
Wood
Work
Worship
Writing
Youth

Additional Items

Name of the ORIGINATOR:	**BRIEF DESCRIPTION OF ITEM:**	Enter R.S. Bank NUMBER OF ITEM

Indicate what sort of thing it is and where it can be found:

Manuscript	Pamphlet	Map	Held by R.S.P. Library
Book	Sound Recording	Diagram	Held by Lancaster U. Lib.
Journal	Filmstrip	Place/Building	Held by St Martin's Lib.
Magazine	Slide(s)	Artefact	Held by other
Newspaper	Picture/Poster	other	Available on loan

If it can be reproduced in bulk, classify it as:—

'Note': RSP	'Guide': Other	'Source': Diagram	'Note' for a Teacher,
'Note': Other	'Source': Text	'Source': Picture	'Guide' for a Pupil,
'Guide': RSP	'Source': Map	'Source': other	'Source' materia for general information.

Date of Origin or Publication:

Before Christ	19th century	1961 to 1970
AD to 1000	1901 to 1950	1971 onwards
1001 to 1800	1951 to 1960	

Nature of Contents: Advanced Popular Elementary

What age group could this be used with?

5-11 years 11-13 years 13-16 years 16-18 years Over 18

Periods with which it is concerned:

Before 500 BC	AD to 1000 AD	19th Century	1951 to 1970
499 BC to AD	1001 AD to 1800	1901 to 1950	1971 onwards

What Regions are concerned?

Africa	Australia & N.Z.	Europe	The Middle East
N. America	The Pacific	England & Wales	The World
S. America	The Arctic	Scotland	Space
Asia	The Antarctic	Ireland	other

With what Academic/Timetable Subjects does this item overlap?

archaeology	education	mathematics
architecture	English	medicine
anthropology	geography	modern languages
art and craft	geology	music
astronomy	general & liberal studies	philosophy
biology	government & politics	physics
business studies	history	psychology
chemistry	housecraft	sport
classics	law	sociology
economics	linguistics	technology

What Topics or Themes?

addiction
aesthetics
agriculture
animals
animism
apostle
armed forces
assessment
attitudes
authority
belief
Bible
birth
broadcasting
Buddhism
buildings
careers
Catholic
censorship
changes
Christianity
class
clothes
communication
communist
Confucianism
conservation
consumption
contemplation
control
countryside
creation
crime
culture
death
decorative arts
deism
deviance
disciple
dissent
drink
drugs
eastern
economy
Egypt
emotions
energy/power
entertainments
ethics
euthanasia
faith
family
fashion
females
films
folklore
food
forgiveness
gambling
genetics
God
goodness
government
Greek
groups
health/healing
Hinduism
housing
Humanism
ideology
India
industry
instinct
internationalism
Islam
Jesus
Judaism
languages
learning
leisure
life
literacy
machines
magic
males
marriage
martyrs
mental
Mesopotamia
migration
miracle
Mithraism
money
morals
motivation
mystery
mysticism
myth
natural resources
nationalism
Orthodox
people
persecution
personality
pictures
planning
plants
poetry
police
politics
pollution
population
poverty
prayer
prediction
prejudice
press
primitive societies
principles
prisons
production
propaganda
property
prophecy
prosperity
Protestant
publicity
race
reason
relationships
research
Resurrection
revelation
reverence
revolution
ritual
roles
Roman
Russian
sacrament
saint
Scandinavia
sensitivity
service
sex
Shintoism
slavery
snobbery
social services
suffering
superstition
symbol
Taoism
teaching
towns
theatre
trade
tradition
transport
travel
truth
violence
vocation
war
water
weapons
weather
western
work
worship
Zoroastrianism

ORIGINATOR | DESCRIPTION | NUMBER

WHAT IS IT ?

Note, Guide, Source?

note	source: text	source: book/pamphlet	source: artefact
guide	source: picture/diagram	source: sound recording	source: other
	source: map	source: place/building	

Origin?

before 1900	1900-1950	since 1950	foreign

Treatment?

narrative	fiction	verse	biography drama

Audience?

first year	third year	C.S.E.	sixth form
second year	fourth year	O-Level	staff

WHAT IS IT ABOUT ?

What periods?

before 500 AD	1500-1800	1900-1950	since 1950
500-1500	1800-1900		

What places?

England	Western Europe	North America	West Asia
Local	France	Sth. & Cen. America	Israel
Scotland	Germany	East Asia	Australia/NZ
Wales	Eastern Europe	China	Space
Ireland	Russia	India	Fictional places
	Africa	Japan	

What ages?

childhood	youth	adulthood	old age

What school subjects?

art	economics	housecraft	physics
biology	English	mathematics	religious studies
chemistry	geography	mod. languages	sport/PE
classics	history	music	sociology
			technology

What topics?

agriculture	death	ideology	press
animals	deviance	industry	psychology
archaeology	dissent	law	publicity
architecture	education	medicine	race
anthropology	emotions	morals	sex
astronomy	energy/power	natural resources	social services
birth	family	philosophy	towns
censorship	folklore	planning	transport
class	food & drink	plants	violence
clothes	genetics	pollution	war
conservation	geology	popular arts	work
countryside	government	population	
crime	housing	poverty	

ORIGINATOR	DESCRIPTION	NUMBER

WHAT SORT OF THING IS IT?

Note, Guide, Source?

note: GSP	guide: GSP	source: text	source: map
note: other	guide: other	source: picture	source: other
		source: diagram	

Reference?

ref. to book/pamphlet	ref. to map	held by GSP
ref. to sound recording	ref. to diagram	held by York U. Lib.
ref. to filmstrip	ref. to place/building	held by York City Lib.
ref. to slide(s)	ref. to artefact	held by other
ref. to picture/poster	ref. to other	Available on loan

Origin?

before 1900	1965 to 1967	book (or journal)
1900 to 1949	1968	newspaper
1950 to 1959	1969	foreign
1960 to 1964	1970	student

Treatment—objective features?

autobiography	documentary	humour
argument	description	narrative
bibliography	drama	translation
biography	fiction	verse

Treatment—originator's judgement?

biased	factually suspect	moving
difficult to understand	informative	stimulating
easy to understand		

WHAT IS IT ABOUT?

What periods?

before 500 BC	1600-1699	1930-1939
500 BC - 499 AD	1700-1799	1940-1949
500-999	1800-1849	1950-1959
1000-1249	1850-1899	1960-1969
1250-1499	1900-1919	1970-1971
1500-1599	1920-1929	future

What places?

World
Britain
- England
  - S. East
    - London
  - S. West
  - E. Midl.
  - W. Midl.
  - N. West
  - N. East
  - Yorkshire
    - York
- Scotland
- Wales

Europe
- Austria
- Benelux
- E. Europe
- France
- Germany
- Greece
- Iberia
- Italy
- Russia
- Scandinavia
- Switzerland

Africa
- Cen. Africa
- East Africa
- North Africa
- South Africa
- West Africa

Canada
Cen. America
South America
U.S.A.

Asia
- China
- India
- Israel
- Japan
- Mid. East
- Pakistan
- S.E. Asia

Aus. & N.Z.
Pacific
Arctic & Antarctic
Space

What age group?

Under 5
5-11
12-15
16-18
19-25
26-40
41-60
Over 60

What academic/ timetable subjects?

archaeology
architecture
anthropology
art
astronomy
biology
business studies
chemistry
classics
economics
education
English
geography
geology
general & lib. studies
government & politics
history
housecraft
law
linguistics
mathematics
medicine
modern languages
music
philosophy
physics
psychology
religious studies
sport
sociology
technology

What topics or themes?

addiction
agriculture
animals
armed forces
assessment
attitudes
authority
birth
broadcasting
buildings
careers
censorship
changes
class
clothes
conservation
consumption
control
countryside
crime
culture
death
decorative arts
deviance
dissent
drugs
economy
emotions
energy/power
entertainments
family
females
films
folklore
food and drink
gambling
genetics
governments
groups
health
housing
ideology
industries
industrial relations
international relations
languages
leisure
literacy
location
machines
males
marriage
migration
money
morals
motivation
natural resources
personal relationships
pictures
planning
plants
police
pollution
popular arts
population
poverty
prediction
prejudice
press
primitive societies
prisons
production
property
prosperity
publicity
race
research
revolutions
rituals
roles
sculpture
sex
slavery
social services
socialisation
teaching
theatre
towns
trade
tradition
transport
violence
war
weather
work

Write local features in this space.

RIVINGTON & BLACKROD HIGH SCHOOL

FEATURE LIST

Description of Material

Originator
Is stencil held? YES/NO
if yes, where? .....
.....

Accession No. .....

Date Deposited .....

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1. What sort of thing is it?

Book
Book Extract
Chart
Cineloop
Single Copy
Multiple Copy
Diagram
Exam paper
Film
Filmstrip
Gramophone Record
Illustration/Drawing
Magazine Extract
Map
Medal
Newspaper Cutting
Society/Organisation
Pamphlet
Photograph
Questionnaire
Sheet Music
Slide (a)
Specimen (a)
Study Guide (Multiple copies)
Study Guide (Single copy)
Study Pack/Kit
Syllabus
Tape
Tape Cassette — Video Tape
Teacher's Notes — Video Cassette
OHP Transparency — Worksheet

2. Where is the item stored?

Filmstrip
Tape Library cabinet
Slide cabinet
Chest/Poster cabinet
Display/Picture cabinet
Study Kit Shelves
Reference Shelves

3. Treatment

Abstract
Bibliography
Documentary
Outline
Narrative
Statistics
Verse
Vocal

4. Treatment — originator's judgement?

Difficult to understand
Easy to understand

5. Audience?

Lower School—1st/2nd Years
Middle School—3rd/4th Years
Upper School—5th/6th Years

6. Period covered by material

Before 500 AD
500 AD - 1500 AD
1500-1600
1601-1700
1701-1800
1801-1900
1901-1918
1919-1945
1945-now

7. If stored departmentally, where?

English
Mathematics
Art
Craft
History
Geography
Geology
R.E.
Language
Domestic Science
Commerce
Physics
Chemistry
Biology
P.E.
Careers

TOPICS OR THEMES

Advertising
Agriculture
Aid
Animals
Anthropology
Armaments
Archaeology
Architecture
Arts – Applied
Arts – Fine
Astronomy
Attitudes
Biography
Biology
Birth
Botany
Buildings
Canals
Careers
Censorship
Chemistry
Children
Civilisations
Class
Climate
Communications oral and written
Community
Computers
Conflict
Conservation
Costume
Crafts
Culture
Dance
Death
Deserts
Disaster
Drama
Drugs
Economics
Education
Engineering
Environment
Evaluation
Exploration
Family
Finance
Flights
Folklore
Freedom
Games
Geography
Geology
Government/Politics
Health/Hygiene
History
Housecraft
Housing
Hunger
Ideology
Industry
Industrial Relations
Languages
Law & Order
Leisure
Literature
Marriage
Mathematics
Media (TV, Radio, Newspapers, Theatre & Cinema)
Medicine
Men
Migration
Money
Morals
Mountains
Music
Myths
Natural Resources
Natural History
Nutrition
Old people
Personal Relations
Philosophy
Physics
Planning
Poetry
Pollution
Population
Poverty
Prejudice/Tolerance
Psychology
Race Relations
Rail
Religion
Recreations
Rivers
Roads
Rulers/Presidents/Statesmen
Science
Sculpture
Sea
Sex
Slavery
Sociology
Space
Sports
Statistics
Taxation
Technology
Towns
Trade
Transport
Union
Villages
Violence
Warfare
Welfare State
Women
Work
Youth
Zoology

GEOGRAPHICAL INFORMATION

World (General)
Europe (General)
France
Germany
Benelux Countries
Switzerland
Italy
Portugal
Spain
Greece

Gt. Britain
England
Scotland
Wales
N. Ireland
Eire
Norwich
Harwich
Bolton
Wigan
Manchester
Liverpool
Lancashire

Scandinavia
Middle East
Africa
N. Africa
W. Africa
S. Africa
E. Africa
China
Russia
N. America
United States

Central America
South America
Australia
Oceania
Arctic
Antarctic
Asia
India & Pakistan

INFORMATION RETRIEVAL AT THE ILEA MEDIA RESOURCES CENTRE-

DAVE FERRIS SENIOR INDEXER,ILEA MRC.

The Media Resources Centre (MRC) of the Inner London Education Authority (ILEA) is one of a number of support services run by the Authority to meet the growing and varied needs of its teachers. It was set up in 1971 with a brief to work in two main areas: the Production Service was to devise and produce learning materials particularly relevant to the needs of London's schoolchildren, whilst the Library and Information Service was to provide information on the escalating range of commercially available resources. The work of the Centre as a whole[1] and of the Library in particular, have been described elsewhere. The purpose of this paper is to look at the information retrieval system which has been developed, and is still developing, within the library.

A number of general points about the library must be made, however, in order that the context in which the system exists is understood fully. In the first place, it is a collection of all types of resources except 16 mm film and books, for which the Authority has made separate provision. The items in the library are all produced commercially and are currently available. Once it is known that an item is no longer available (not always an easy fact to ascertain) it is withdrawn. The stock is on open-access display, and users are encouraged to view, listen to, or play with, items. The final factor concerning the material is that it is for reference only. In an ideal situation a loan service would exist to complement our display function. Our current brief, however, focuses primarily on the need to inform London teachers of the resources which are available, and to allow them to preview material (which is often expensive) before deciding on an item to be purchased.

The basic philosophy behind our approach to all resources is that the value of an item lies in the information it contains. Its physical format is not relevant (although obviously certain media lend themselves to certain subjects or approaches rather than to others).

The medium is not the message but a method of communication, and material should be arranged by the criteria which most usefully groups it for our users, that is, by its subject content, not its physical characteristics. The logical conclusion of this argument would be the arrangement of all material in one sequence; such an arrangement is, however, obviously not viable. The shelving of, for example, filmstrips, wallcharts and audio-discs together is extremely wasteful of space, if possible in theory. We have therefore been forced to compromise to the extent of ten sequences, relying on the catalogue to present a totally integrated approach to the stock. In defence, it must be stated that the sequences are not intentionally media-dependent. The sole criterion for storage is, "In which sequence is an item happiest physically?" Thus audio-cassettes, 8 mm cassetted filmloops, playing cards and some other smallish items can and do stand together in one sequence.

Given that material was to be on open-access display, one of our first problems was the choice of a system for shelf arrangement. Accession number order would be of little use, given that browsing was to be encouraged actively. A large proportion of our users seek material by subject, so a subject-based arrangement was essential. Leaving aside for the moment theoretical considerations, the choice of the Dewey Classification Scheme (DC) was, purely from the point of view of shelf arrangement, a fairly straightforward one. Of the existing general classification schemes, its notation is far and away the simplest and easiest to use, and it is the scheme with which our users are most familiar.

The emphasis on the intellectual content of material rather than the media carries over from storage and browsing facilities into all other aspects of the retrieval system. There has been a somewhat unfortunate leaning towards the idea that the introduction of new types of material necessitates the introduction of totally new techniques. Leaving aside the wasted effort in developing such new techniques before old and tried methods have been seen to fail, such an approach is a positive encouragement to sectionalism, an incentive to regard information in book form as being inherently different from information in other formats. Our approach has always been to try traditional library techniques first, and to adapt or reject as necessary. Our experience so far has shown the need for occasional adaptations, but not for any rejections.

A number of other constraints on the development of the system must be mentioned before the details are described. From our inception, we had intended to number amongst our services provision of both comprehensive and selective listings of materials to be distributed to schools within the Authority. Since such lists, whether selective or comprehensive, were likely to be used as a basis for selection by their recipients, it was essential that they contained the fullest cataloguing details, particularly with regard to technical specifications. From the point of view of the prospective purchaser of software (i.e. materials), an essential criterion was whether he possessed the necessary hardware (i.e. equipment) to use it. Thus it was vital to differentiate in catalogue entries between, for example, standard and super 8 mm filmloops, even though this differentiation was repeated by markings on the containers of items within the stock. The catalogue entries, in other words, had to be totally descriptive and informative whether or not the relevant item was at hand.

1. *See: Controlling the means of production, Weiss. (In Times Educational Supplement, 12 July, 1974).*

2. *See: The library and information service at the ILEA's Media Resources Centre: a personal view, Shifrin. (In Education Libraries Bulletin, Vol. 18 (2), Summer 1975.*

One checklist of material held in the collection was compiled and distributed in 1972, but the subsequent increased rate of addition and withdrawal of material has meant that such lists would be out-of-date before they could be printed. Any subsequent ventures in this area must wait for our obtaining access to the technology needed to make frequently updated lists available at a price the Centre can afford. Selective listings "materiographies" — have, however, continued to be produced by the simple method of producing stencils from photocopies of catalogue entries.

The question of the fullness of cataloguing data was also affected by the possible areas of development within the Authority. The library service of the ILEA is essentially a system with 1200 branches. It seemed inevitable that at some future date a centralised cataloguing service would be organised, to include both books and other types of material. If our data base were to be used as a basis for part of such a scheme, it was important that full cataloguing data was available. Elements of cataloguing records can be deleted easily either in mechanised or manual systems according to the needs of individual schools. For example, the catalogue record could be simplified for a primary school by the omission of a large part of the non-technical section of the entry, whilst secondary schools could receive slightly fuller entries to meet their requirements. To start, however, from a brief entry and attempt to add different levels of information as various schools stated their requirements would be a more difficult and more expensive task.

When considering centralised systems, our thoughts turned to the national level. Again it seemed inevitable that at some stage the "non-book" world must start to enjoy some degree of bibliographic control and centralised services similar to those which now ease life within the "book" world. One pre-requisite of any such scheme is the acceptance and adoption of standards by users of the service. Thus the adoption of standard DC, the British cataloguing standard (LANCET)[3] and the use of PRECIS[4] were relatively straightforward decisions.

The internal arrangement of our system was also a comparatively easy decision, since the classified catalogue appeared to have no real rivals. Of the potential systems available, Optical Coincidence Card Indexing (OCCI) seemed a prime example of the introduction of new techniques simply because there were new media. Apart from the intrinsic weaknesses of post-co-ordinate systems and the problem of attempting to use a technique which was designed for small, limited subject collections in a rapidly expanding general collection, OCCI seemed extremely likely to introduce the idea of separatism between books and other types of material. Few of the protagonists of such systems have yet argued for its use in the school library's book collection. A final factor was that if OCCI were to be used with a classified shelf arrangement, it would necessitate a three step approach (feature card-accessions file-shelf). Such a system would seem designed to dissuade visitors to the library from using the catalogue, the main tool of integration.

The use of a dictionary catalogue was a slightly more feasible proposition. Apart from this system's claims of immediacy, ease of use and so on, two factors weighed against it. Firstly, it is not in common use within ILEA school libraries, nor indeed within the country as a whole, and was not, therefore, a familiar tool. Secondly, its use, if we were to work within the constraints of using systems which permitted co-operative schemes, necessitated the use of a published list of subject headings. Library of Congress Subject Headings (LCSH) designed for a large research library, did not seem suitable for us or a school library. Furthermore, its American bias and theoretical shortcomings rendered it distasteful. The alternative, Sears, whilst of more use in a situation such as ours, was derived largely from LCSH and suffered from all of its problems, plus a few of its own. Furthermore, neither permitted the specificity of subject approach which we required, nor had they the ability to express the multi-disciplinary nature of much of our material, without constantly adding to the existing lists, and creating complicated headings with the inherent filing problem.

3. LANCET is prepared by a joint committee of the Library Association and the National Council for Educational Technology.

4. PRECIS is the indexing system adopted by the British National Bibliography.

Sample catalogue entry showing a single item.

Any doubts we had about adopting a classified catalogue were happily dispelled for us by developments elsewhere. The main arguments against the classified catalogue centre on the inadequacy of existing classification schemes to deal with current published materia', the increasingly complex subjects and cross-disciplinary approaches to topics. Much of this argument should be aimed not at the classification schemes, but at the failure of librarians to provide adequate access through their alphabetical subject indexes.

Had the traditional chain-indexing approach been the only viable method of subject indexing, we might well have had to think twice about adopting a classified catalogue. 1971, however, saw the introduction of PRECIS (Preserved Context Indexing System) at the British National Bibliography. This was a system which, we considered, allowed the flexibility and specificity of subject approach which we required.

Since the documentation of PRECIS is both sparse and fairly advanced,[5] it is perhaps as well to summarise its salient features. The system (and it must be emphasised that it is a **system** and **not** an index vocabulary) is based upon the construction of a subject statement summarising the content of the item being indexed. The concepts within this summary are isolated and placed in an order predetermined by their role according to the grammar of the system.

Thus we might summarise the subject of a set of slides as "The Apollo 11 flight to the moon". This is not the place to explain in detail the syntactical rules of PRECIS; suffice it to say that the system is based upon the concept of context-dependency. Each term in the "string" of terms constructed from the subject statement sets the next term in its obvious context, thus the string from the above statement would be

(1) Moon
(2) Space flight, manned
(3) Apollo 11

The figures to the left of the string are the role operators and follow a prescribed order. This ensures that the concepts to which they are attached, and which altogether make up the subject statement, are automatically and consistently arranged by different indexers.

Terms by which the subject is likely to be sought are selected as "lead" terms and entries will be made in the index under each of these, with the rest of the subject statement arranged around them.

MOON
Manned space flight. Apollo 11
SPACE FLIGHT. Moon
Manned space flight. Apollo 11
MANNED SPACE FLIGHT. Moon
Apollo 11
APOLLO 11. Manned space flight. Moon

So at each entry point in the index, we find a full subject statement, thus avoiding the need for hierarchical searching within the classified sequence, as chain indexing requires. To these index entries will be added references to deal with approaches at higher levels of the generic hierarchy (e.g. Solar system **see also** Moon), and to cope with the problem of synonyms and preferred items (e.g. lunar **see** Moon) and closely related terms (e.g. Astronautics **see also** Space flight).

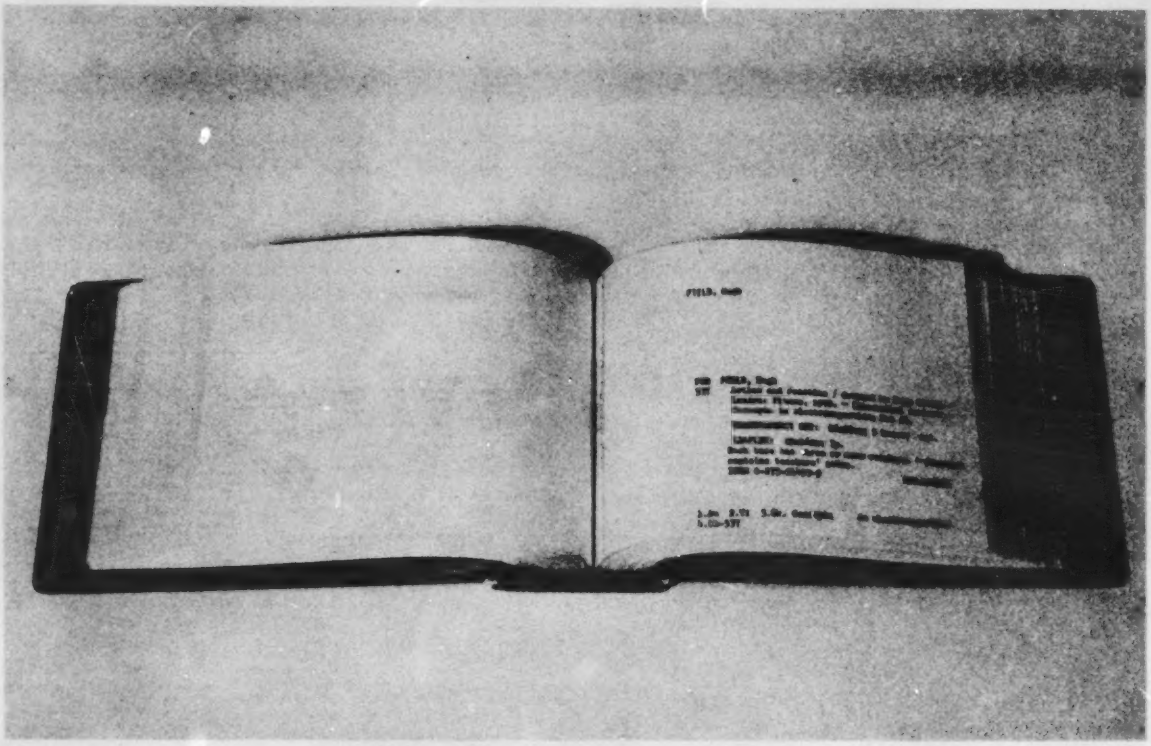
5. See: The development of PRECIS: a theoretical and technical history, Austin. (In Journal of Documentation, vol. 30 (1), March 1974).

Such a brief summary cannot do justice to some of the more sophisticated qualities of this system, but an examination of the subject indexes of either the British National Bibliography or the British National Film Catalogue will demonstrate its superiority as an information retrieval tool over other methods.

The above remarks concerning PRECIS must be qualified insofar as they describe the manner in which we see the system developing. Pressure of backlogs, staffing and so on, has made it the ideal for which we strive. There is also the problem that PRECIS, although it can be operated in a manual system, is primarily designed to be used through a computer, and many of its great strengths are somewhat weakened if operations cannot be performed automatically. At the moment, the MRC does not have access to a computer. We have, however, been adding PRECIS strings experimentally to a number of our items for some time and are now starting to examine ways in which we can best utilise them.

Although the subject approach is probably of more importance with this form of material, mention must also be made of descriptive cataloguing. In 1971 there was no generally accepted standard for the cataloguing of non-book materials. We were fortunate however, in that two members of our staff served on the Library Association National Council for Educational Technology (LANCET) committee set up in 1971 and so our early attempts at cataloguing reflected much of the thinking of this committee.

On the publication of the LANCET rules, we adopted them, not only because they were the British standard but also because they were, in our opinion, far superior to existing codes. With some minor amendments [6] we have found them totally acceptable for our purposes, and catalogue users seem to have little difficulty interpreting the entries. The listing in one area of all the physical formats (including print) which make up the item being catalogued, seems to provide an entry which is easily understandable to both professional and lay users of the catalogue (see page 24). Within the author/title sequence of the catalogue, the copious provision of added entries under all individuals and organisations likely to be sought has greatly increased its use as a finding tool.



Sample catalogue entry showing a multi media item.

6. *See:* *The LA/NCET cataloguing rules*, *Ferris.* *(In The Audio-visual Librarian, vol. 2(1), Spring 1975.*

In addition to the internal arrangement of the catalogue, we had also to consider its physical format. Since the library was a live collection, we needed to be able to add and withdraw entries easily when the items described were no longer available commercially. Given our technical resources at the time, the choice lay between the card or sheaf catalogue. We chose the latter for a number of reasons, not the least being its greater economy of space, a factor which was, and still is, of crucial importance. This format also assisted the adoption of a unit entry system: multiple copies on paper can be produced easily by a Xerox photocopier from a typed original. While it is possible to photocopy on to card, experience elsewhere had shown that the result was not very satisfactory. The fact that we would not be able to utilise a central card service (e.g. BNB) was at the time, of course, irrelevant.

It is perhaps worth considering finally to what extent a system such as that described above is usable in the school library or resources centre. The classification and descriptive cataloguing problems of information retrieval have already been met and, to varying degrees, overcome by school librarians. Whether they should be expected to spend valuable time on these technical processes which are being duplicated elsewhere, is a question which will have to be considered in the near future. The third aspect of an IR system such as ours is likely to bring the day of the central service nearer. The mastering of relatively sophisticated techniques such as PRECIS is the province of the indexing specialist, in the same way that techniques such as selection of material for school libraries is the job of the expert in that field. If, however, learning resources are to be utilised fully, it is essential that relatively sophisticated (albeit simple to use) retrieval methods are generally available. To achieve this, it is essential that specialist organisations provide technical assistance to the librarians on the "shop-floor".

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The author is currently employed by the Inner London Education Authority, and the views expressed are not necessarily those of the Authority.

A
623. FAMOUS planes of the R.A.F. - London: Walton.
740 [196 -] - (A 520).
942 FILM. 8 mm., sil: 1 reel: bw.
Also available on super 8 mm silent, and standard and super 8 mm sound.

MCN. 010700

1. Ti 2.Cl - 623. 74'0942

Sample catalogue entry for a single item.

P
301. INDIANS view Americans, Americans view Indians. -
297 Harldale (NY): Olcott Forward, 1970; Leeds:
307 Educational Audio Visual.
1 DISC. mono, 33.3rpm, 30 cm: 2 sides.
FILMSTRIP SET: 35 mm, s.fr: 2 filmstrips: col.
PAMPHLET SET: 23 cm; 25 pamphlets.
BOOK: 22x28 cm; 82p.
PICTURE SET: 29x24 cm; 5 pieces: bw.
SPIRIT MASTER SET: 28x22 cm; 20 masters.
Pamphlet set consists of 25 copies of pamphlet entitled 'Indian readings' - Book contains teachers' guide to use of material - Filmstrips and disc to be used together. - Boxed (32x34x8 cm).

MCN. 006441

1. Ti 2.Cl - 301. 29'73'071

Sample catalogue entry for a multi-media item.

A RETRIEVAL SYSTEM FOR A SMALL COLLECTION

MICHAEL STEVENI

The School of Art Education at Birmingham Polytechnic is a fairly small, highly specialised department training post-graduate teachers who have particular needs. To satisfy these, we create learning situations, and provide teaching programmes. In our courses, the question of communication and easy access to information was deemed to be a critical problem, and we instituted a pilot study to see what could be done about it. Soon after that, we were lucky enough to obtain a Leverhulme research grant to carry out the study[1], and this meant that we were able to devote more time to this project than would have been possible otherwise.

In examining our special needs, so that we could adopt a form of classification relevant to them, we discovered that there were certain factors which made these needs highly subject specific. Every educational establishment has an individual indentity, formed largely by the character and ideals of the staff. We found, too, that the language which we used to describe our procedures and values were significantly different from the words used in other parts of the Polytechnic.

These factors were most important in the determination of the type of system. Our working system was not to be concerned with transferring an immutable set of assumptions from the institution to the student; rather we would prefer the student to examine our assumptions and the assumptions of others through a mode of enquiry which is based partly upon himself and his own beliefs. This indicated an information system which was coherent, comprehensible and flexible.

Our solutions were limited on the one hand by the systems available, and on the other by the amount of money which we could obtain to start and run the system. On considering the question of money, we found that there were three factors in this part of the design problem: expenditure on capital items; expenditure on running costs; income from users of the system. We were fortunate enough to obtain a research grant which enabled us to build up a stock of equipment. The running costs, we found, were not limiting our power to purchase, as the limited amount of labour available kept down expenditure. Income was not deemed to be of any great significance.

We then returned to the original brief which we had set ourselves — to find a system which was capable of updating itself constantly. The only possible tool to use in this respect was some kind of computerised system. Computers are advancing so rapidly that our initial look at their capabilities is now completely out of date, and for anybody setting up a system, obsolescence is a most important point. Computer output microfilm was in its infancy in those days, and it seemed that this system would not provide what we wished.

All systems, we discovered, had two main elements — the actual hardware, and the operator. These two elements assembled a third element, which, very loosely, could be called the software generated by the system. In broad terms, the more complex the system, and the more comprehensive the classification and storage of information, the shorter the time spent in retrieving information. If it were possible to have available all the time a large number of helpers with skills in handling book and non-book items, a relatively simple system might be the answer, because human beings are more flexible in anticipating other human beings than are machines. If the users can be trained to address the system by themselves, then the work force is better employed in storing information in a manner which is easily accessible to the users. The most usual situation in educational circles, is that there is very little help available for maintaining and assembling resources materials, and indeed we are in that position. We decided that we had to evolve a system which would mean that the resources workers directed the efforts of other people who were programming-in new material; and much of the actual work in programming and storing the material is now done commercially. The only work required from the staff is an academic decision about the type of classification required, and on the teaching unit with which the material is associated.

If we return to a consideration of the various systems which are available, we find that at one end of the scale is a highly expensive computerised organisation, while at the other is the simple card system used in libraries. This consists of a sequence of cards kept in drawers. The cards, which refer to items kept elsewhere in the system, may be assembled in many different ways, but usually are held in terms of the item or of a description of the item itself, placed in conceptual terms within some hierarchical review of the area concerned. It is usual to generate more than one card for each item. One, for instance, may be placed in the author catalogue, another in the subject catalogue, and another in a catalogue concerning type of anticipated use; in a school, for instance, this might be by age of user.

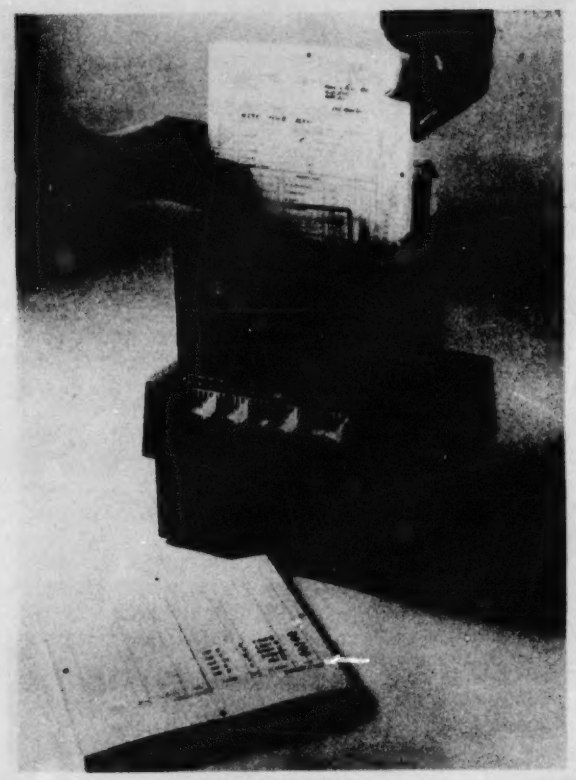
1. See: *The storage and retrieval of information in a subject specific area, Steveni. Birmingham Polytechnic.*

One possibility is the strip index book. Narrow strips are inserted into guides on a page, the result being that cross-referencing is more possible and visual access is much greater than in a card system. We have incorporated a strip index in our card system. Another commonly used system which many schools are investigating is that of optical co-incidence, described elsewhere in this volume.

Cards may be marked in such a way as to provide co-incidence or conjunction of the idea expressed on the card. The simplest way of doing this would be to draw a mark on the spines of the cards in a particular position, thus indicating a certain kind of presence; or a colour coded mark may be placed on the card in a similar way. This would mean that a visual sorting would have to be carried out and the cards shuffled in some way to extract those required.

This notion has been improved upon by the punching of small holes parallel to the edge of a card or within the body of it. Thin rods can pass through these holes. Such cards could have the holes extended to the edge, so that the cards which did not signify presence of items would be held by a rod pushed through a selected position and the cards which signified presence would drop out of the pack. In the case of cards where the hole has been punched within the body of the card, the shape of the hole could be extended in selected directions to allow the card to slide in a particular direction if it did signify presence. We examined some of these card systems and found that, whilst useful, they were not flexible enough for us as one could ask them only one question at a time. Although, using various jigs, it is possible to ask more than one question, hand sorting with rods takes a lot of time.

We liked the idea of a card which could be sorted by mechanical means, so we looked more closely at such systems and eventually discovered one in which the cards could be placed on top of rods in a vibrator box. Much quicker to use and more flexible than any of the other mechanical card systems which we saw, it is the one we adopted. We chose equipment for thirty column punched cards because the eighty or one hundred and twenty punched cards equipment (which would have been much more suitable) was too expensive.

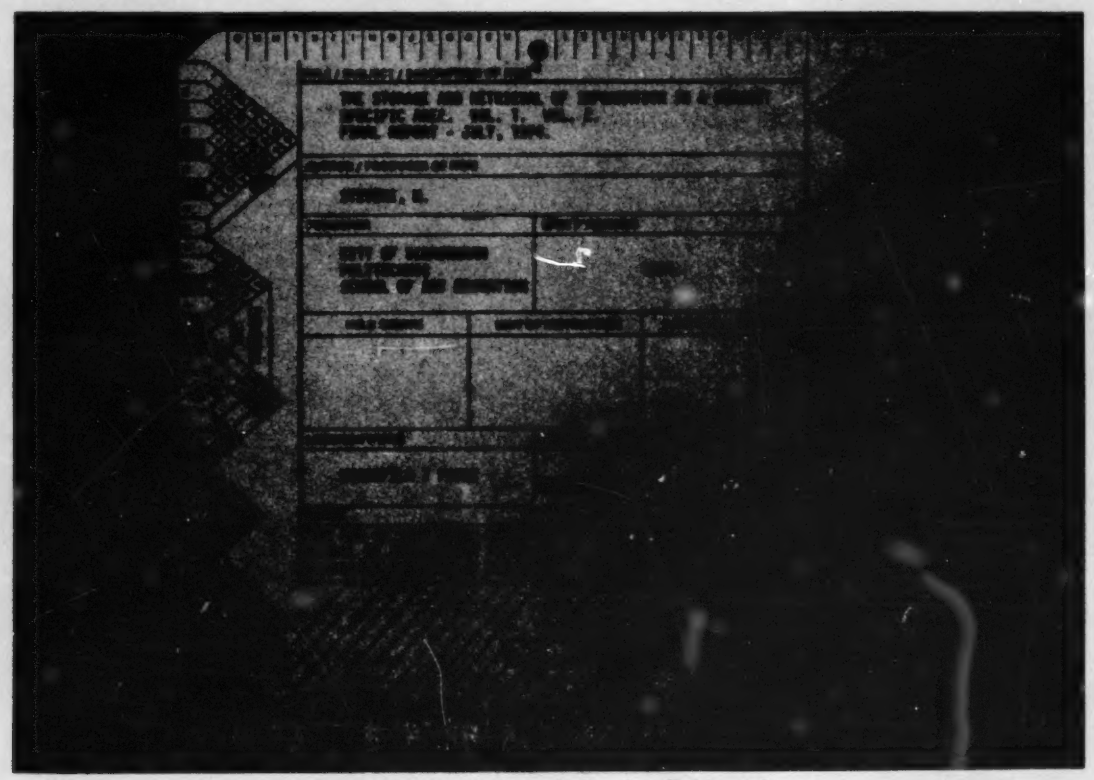


A vibrator box

While we were investigating indexing vehicles we were also considering the type of classification system which would suit our needs. Analyses of the words which were in common use in the Department and of the titles held in book form in the Library revealed that we had restricted interests. Naturally, we were interested in art, but also in certain aspects of psychology; in sociology and philosophy from the point of view of aesthetics; investigations of reality, ontology, linguistics and systems analysis also featured prominently; aspects of education were also well represented although the degree of detail there was greater than in the rest of the system. So, although we could establish a hierarchy of subject matter, the hierarchy required a much greater degree of detail in some parts than in others, and thus could not be tiered easily in a regular manner.

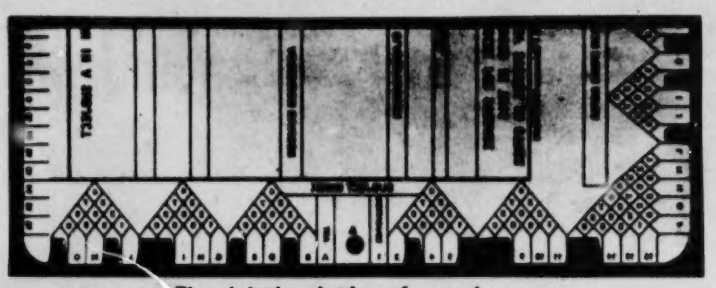
It should be emphasised at this point that our knowledge of such systems did not come quickly or easily. We had to read extensively and to employ experts to help us to understand the concepts involved, and it might well be said that it would have been better if experts had been employed to evolve the system in the first place. It is our experience, however, that experts become over-concerned with one type of solution and that the expertise of the teacher is as important as the expertise of the librarian in evolving a system to satisfy our needs. We have learned gradually, but it could well be that, in the process, we have indicated novel solutions to problems because we were ignorant of "the proper answer".

The best system we could devise was one which required two entries on the same card, one entry being a description of the item in terms of **knowledge**, and the other one being a description of the item in terms of **the way in which it would be used.** Our eventual decision was to adopt a Kalamazoo notched edge card system with 32 notched positions on each of the four sides. The central area of the card contains written data concerning the title, author, source, publisher, date of application, where the item is held within our collection, whether it is a microfilm item or not, and a space for a description of the item. The edges have positions for the first significant letter of the title, the initial letter of the author's surname, the date of publication, the date to which the item refers, the type of medium and the classification.



A typical edge notched card showing field entries.

One edge is left free for designation as a unit of instruction, or for any other purpose deemed suitable. It can be seen from inspection of the sample card that three of the edges are coded, using single pyramid codes or groups of pyramid codes. It is thus possible for instance, using 32 positions on the right-hand edge to designate any one of the 3 million possible selections. The illustration which follows shows a series of pyramids, each one indicating ten units. By the use of two rods in five possible positions any one unit from the ten units can be obtained, and a combination of all six pyramids plus the extra two places will give any required number from 3 millions.



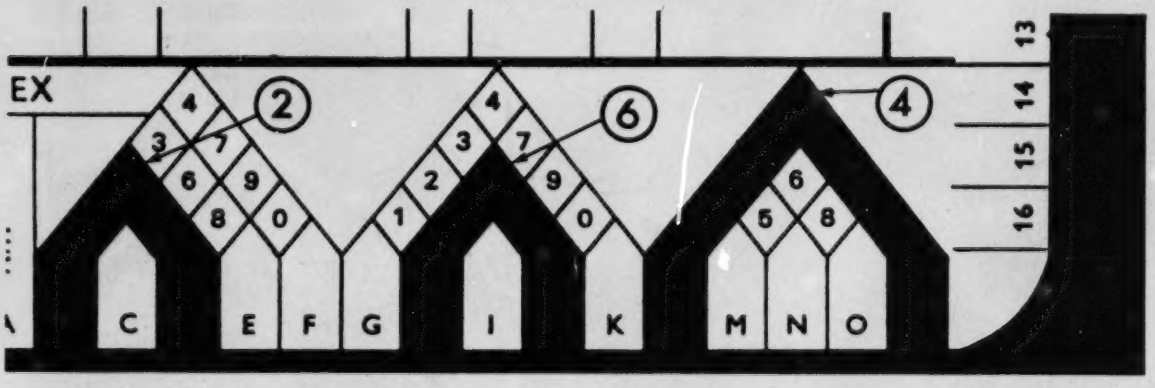
The right hand edge of a card.

Editor's note:

The numbers in any pyramid are selected by varying the position of two rods in the notches in the edge opposite that pyramid. There are no rods under pyramids with a value above the figure being searched. Only one digit of the number is taken from each pyramid. For a three digit number, we would need 6 rods; for a six digit number we would need 12. The six pyramids give 999,999 + 1 million + 1 million.

UNITS are found in the pyramid on the far right (LMNOP)
TENS are found in the pyramid second from the right (GHIJK)
HUNDREDS are found in the pyramid third from the right (BCDEF)

For example, to select the digit 6 in the pyramid on the extreme left we place a rod in 15 and a rod in 13. Where the "path" above 15 intersects the "path" above 13, we read off 6, our number.

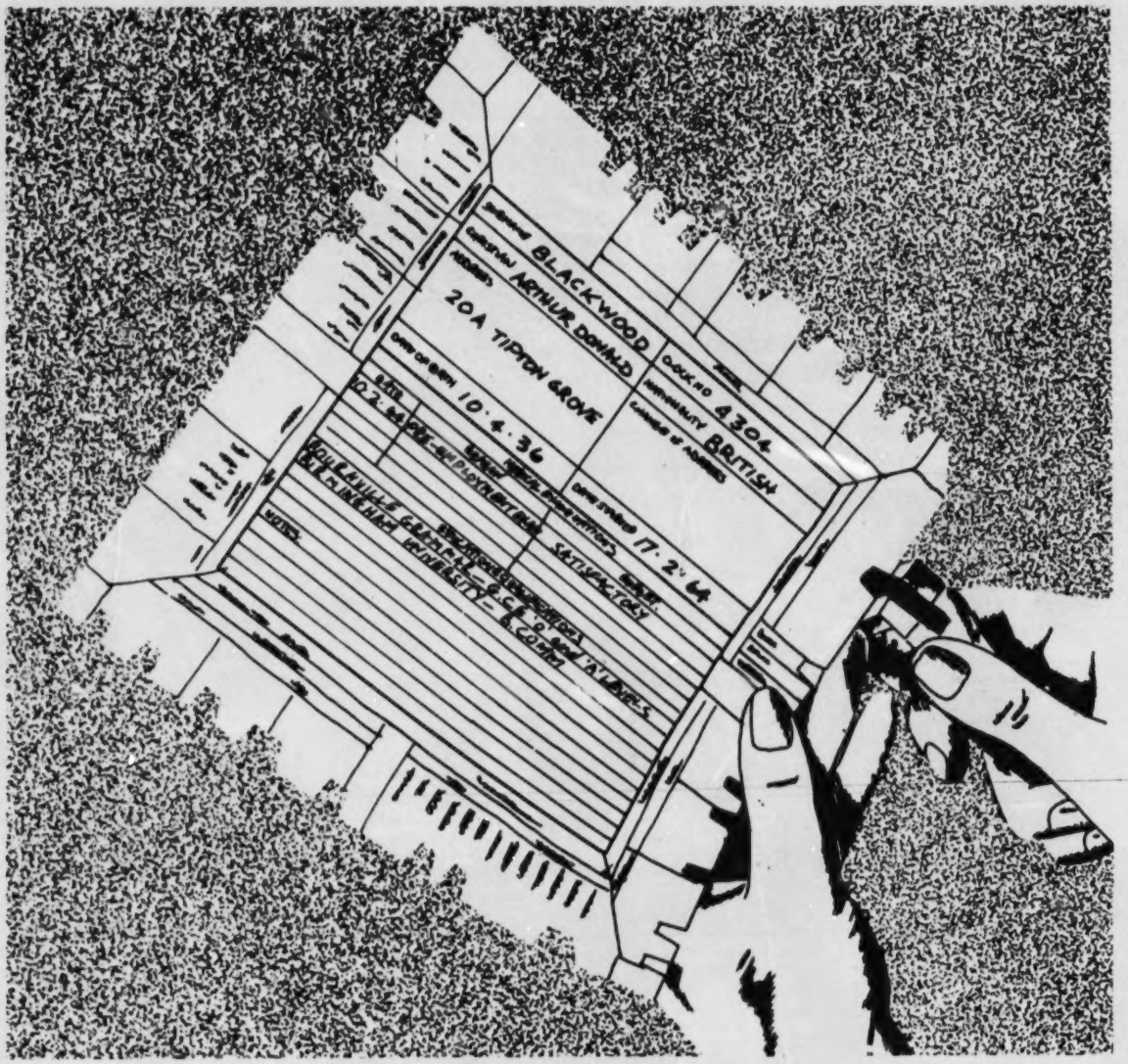


To read 264, we place rods at BD, HJ, LP. The shading shows the paths for the eye to follow, and the number is found at the intersection of the paths.

By placing a rod at 1 (Education) we raise the reading by one million
By placing a rod at A (Art) we raise the reading by another million

The system which we chose was that of using the Dewey decimal codes in the hundreds, tens, and units, which gave a possible thousand terms which were then permutated or measured against a similar number of terms on the same edge of the card. These we designated predicate and subject. Thus, in the term History of Art, "History" would be the predicate and "Art" the subject. Both of these terms are main hundred classifications in Dewey, 900 and 700 respectively. The type of history and the type of art could then be designated further, according to the Dewey classification.

The use of the notched-edge system made this kind of "dual" subject/predicate search possible in a way that other less sophisticated systems would not allow. We have found that it is possible to make interesting searches using the predicate list of terms as well as the subject list; or using the predicate list; or using the subject list. The predicate list on its own gives a series of entries which are not directly concerned with the subject in hand, but are something like it in almost a creative way.

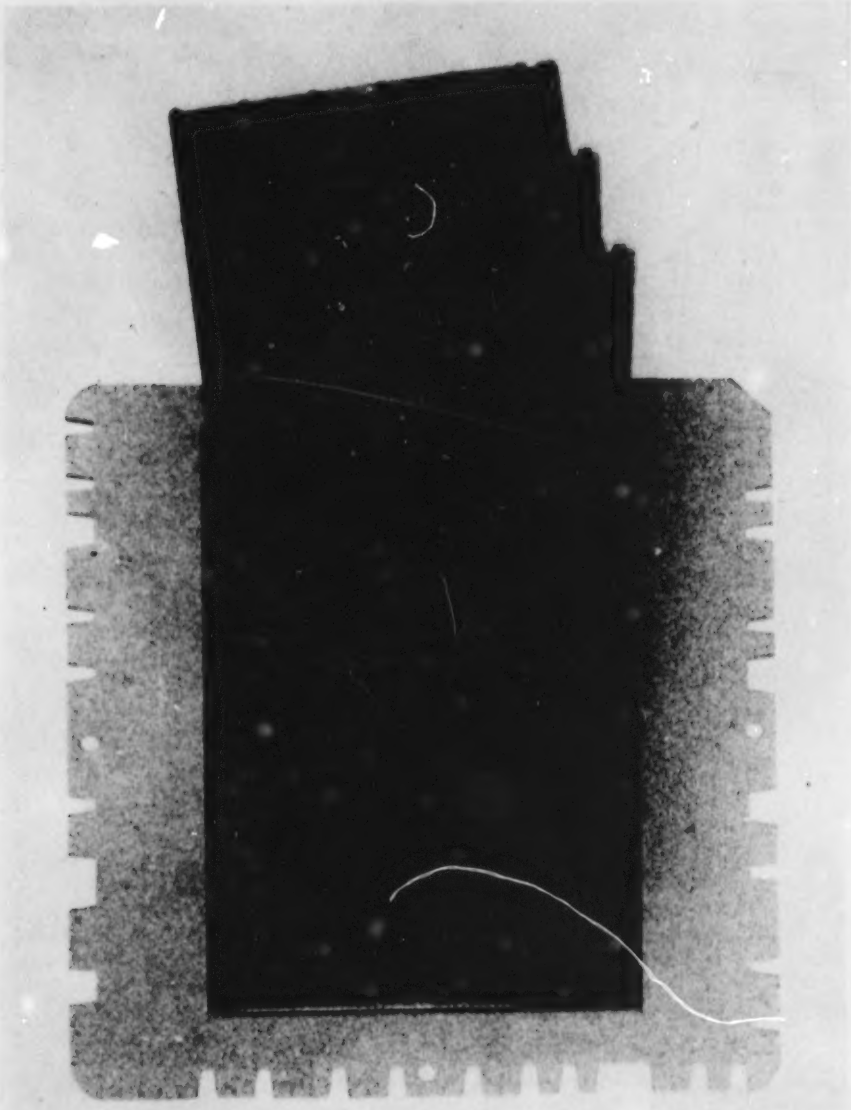


The next stage was that of a possible amalgamation of groups of cards into teaching programmes, which on the one hand would be flexible and yet on the other would designate a value to the items held in terms of a teaching programme. Any card could be duplicated easily, and, if need be, given a second classification. Just as a card could be included in a second or third or any number of teaching programmes, so no item is held to be usable in only one way. Dual entries of "use classification" (or the teaching programmes) as well as "subject classification" are as near as we can come to fulfilling our concept of a constantly changing type of designation.

Although the cards are stored in one particular sequence — author order — it would be possible to store them in any sequence we wished, but the need for this is obviated by our use of secondary indices. These are strip indices and they are generated to anticipate demands. We have found that very many of the questions asked by users are constantly repeated. It is an easy matter to raise a central strip index reference which then refers to a file containing photocopies of the cards which were turned up in that particular type of search. Units of instruction are handled by this method.

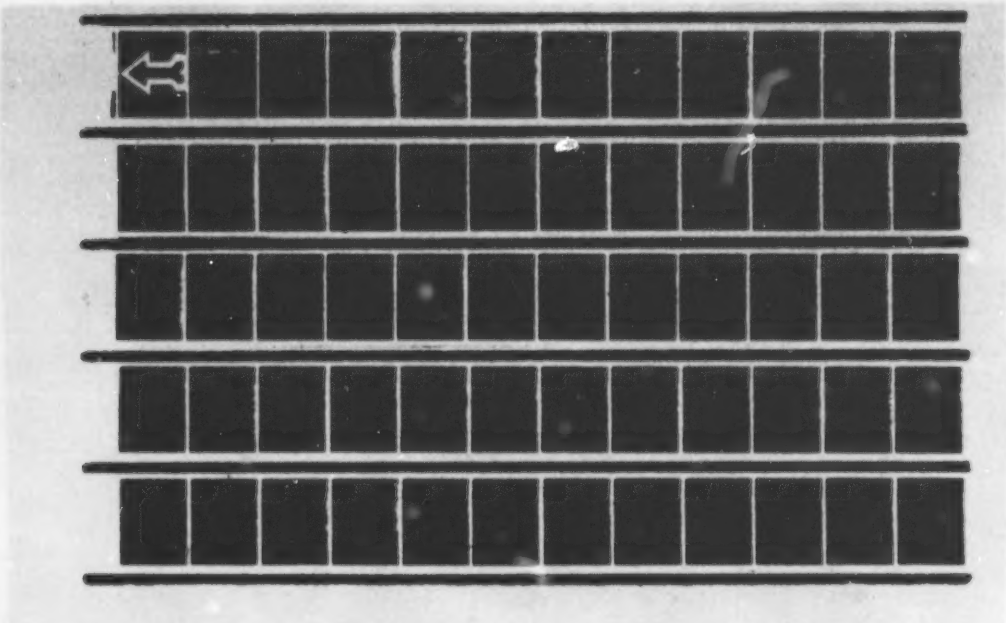
Strip index entries being typed.

A large amount of the material which we own is held in the form of microfiche fixed to the back of each card, and with these cards retrieval is the end of the search. Many of the cards, however, refer to sound tapes, groups of slides, film strips, video tape, and complete books.The student takes the microfiche to a copying machine so that he can obtain his own copy of the material. This is an extremely cheap procedure. It should be pointed out that we attempt to observe copyright regulations and as only single copies for individual study are made from fiche, our students comply with legal requirements. A large part of the material which we hold is not subject to copyright restrictions, as it has been produced locally. We do attempt to contact publishers to ask their permission to put works on to microfiche for reference purposes (which is the main intention of the collection) and we find, nearly always, that they are most co-operative.



The back of an edge punched card, showing the pocket which holds the fiche.

I should explain what "microfiche" is. The original material is photographed on 16mm film which is processed, cut and put into card jackets. It is also possible to use a "step and repeat camera" to make reductions directly on the standard 6cm x 4cm sheet of film – the "fiche". The method which we use gives a series of images slightly larger than those of the step and repeat camera. On average, we place 60 images on a fiche, whereas a step and repeat camera gives 98 images. Images of both sizes are easily readable.



A microfiche

We keep a stock of viewers, most of which are set up in study carrels. Some, which are portable, are available for use at home. About 24 viewers will satisfy the needs of 150 students. The material is brought back to full size by using a viewer/printer in which the fiche is projected on to the viewing screen, and full-size copies can be printed from the frame being viewed. This facility has proved to be most useful. It is used extensively by tutors who store a set of notes on fiche and have the set carded and put into the system. Later they may wish to make full-size copies to hand out as notes to students. This is done by taking one print from the viewer/printer and then using it as a master to produce Xerox copies. It is also possible, when a large number of copies is required, to use the print as a master for offset litho.

One more possibility to be mentioned is that of projection of microfiche. Many microfilm viewers will throw a satisfactory image, enabling tutors to use them with seminar groups attended by as many as 15 students. It is also possible to use the Kodak Instamatic camera[2](which takes film of the same format as normal microfilm) to take photographs which can then be incorporated with other material which has been filmed on the normal microfilm camera. It is thus possible to have a complete collection of material (which otherwise would be mounted as slides) on microfiche.

One of the criticisms of microfilm material is that it does not allow easy browsing. We recognised this and gave a fuller description of the material on the body of the card than would be normal on a conventional library card. This allows students to judge the contents of the items as they look through the cards.

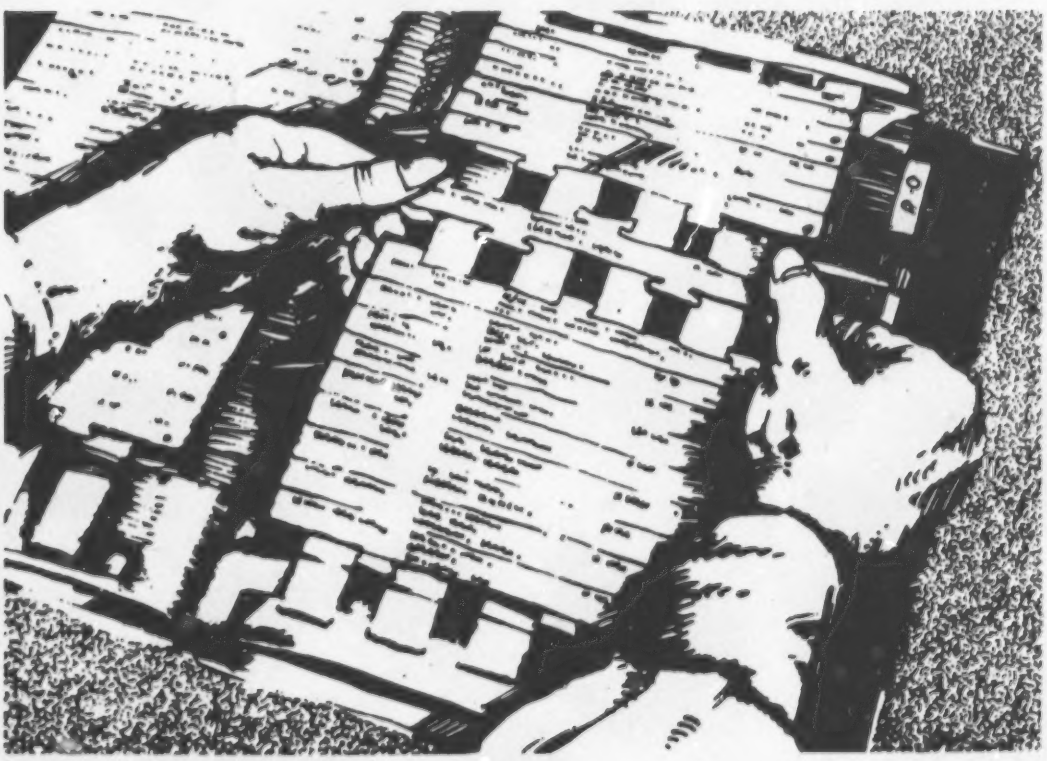
Much of what has been described is, in fact, happening and working well, but some of the things which have been described do not work well – not because they are not good systems – but largely because there are problems associated with their adaptation. Indeed, it could be said of all Resources systems that they are only as good as the people who are using them. A case in point is the ability to project microfilm. This is a most useful technique, yet we find it is seldom used.

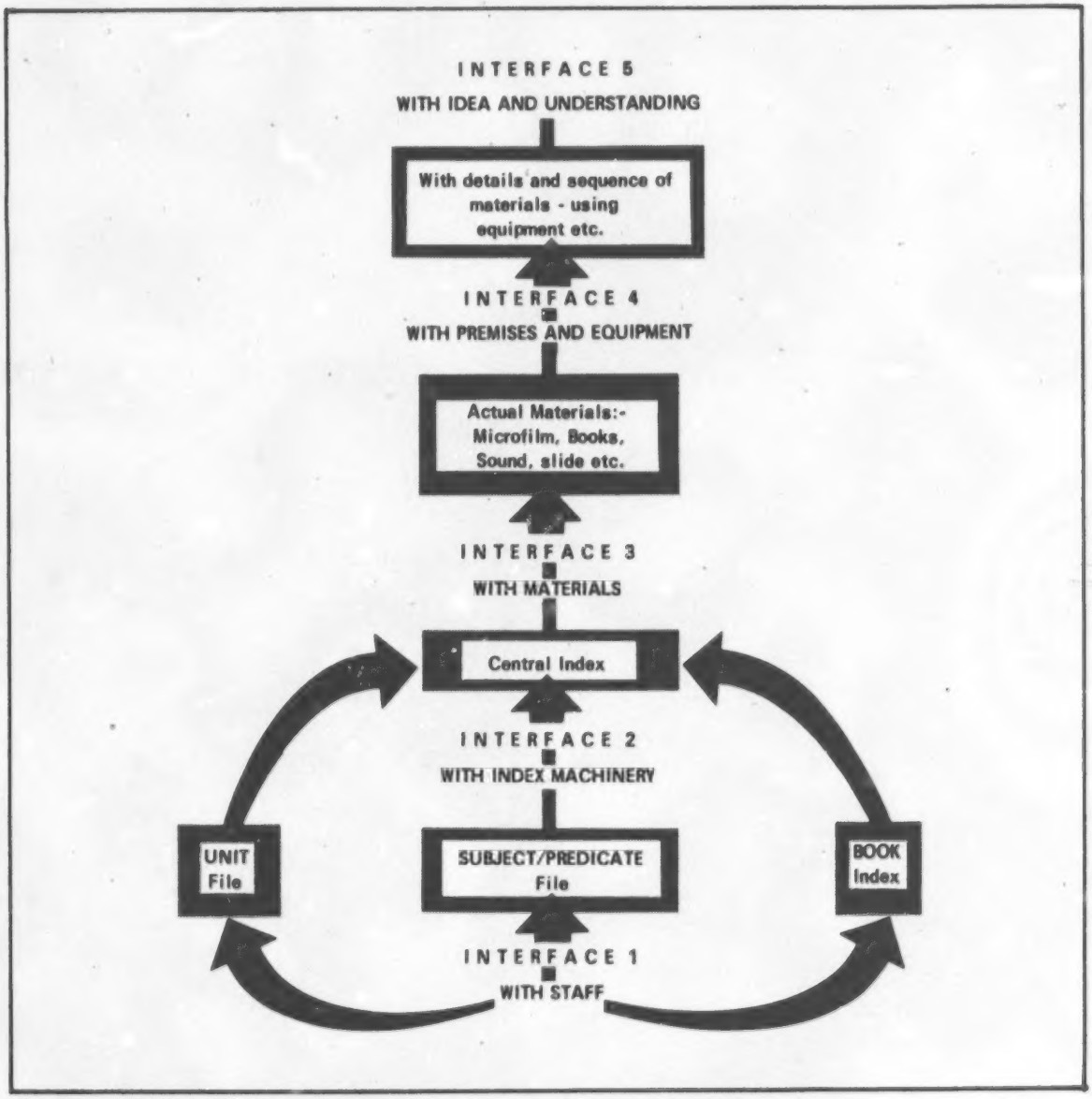
2. See: Visual Education, May 1976 for articles on the 110 camera and applications.

There are procedures which have to be adopted in consulting the card pack, now consisting of more than ten thousand items, and initially users have to be helped to understand how to use the secondary indices to narrow the area of their search. We find that the average person has little knowledge of how to conduct a library search, so all new students are given a short period of instruction in using the system. This is supplemented by individual help when they start working. We were interested in knowing how successful microfiche would be, for we had heard that many people could not stand looking at a bright image for very long. Most of the standards which we could discover related to the quality of an image in terms of clarity, and it seemed that very little information was available about the strength of light required to project the image on the viewing screen. We have, in fact, discovered that poor quality does not seem to put people off reading the material and that the light source required to project the image need not be intense. Complaints about eye strain seem to be related to the degree of familiarity attained by the user. We were able to investigate two age groups of users, and discovered that attitude to the viewing of microfiche was more important than any actual physiological effect.

Availability of material in a resources collection or library is a very important factor. There is nothing more "off-putting" than discovering that an item exists but then finding that somebody else has it. We have, in the Polytechnic, a computer output microfilm index of the books available in all the Polytechnic libraries and also in a group of West Midlands Colleges and Universities, but it would seem that most students, unless very highly motivated, will not go from one building or institution to another to borrow books. The microfiche system provides instant and absolutely reliable access, for the master copies never leave the building. Once this fact is well understood by the students it is a powerful inducement to use the system.

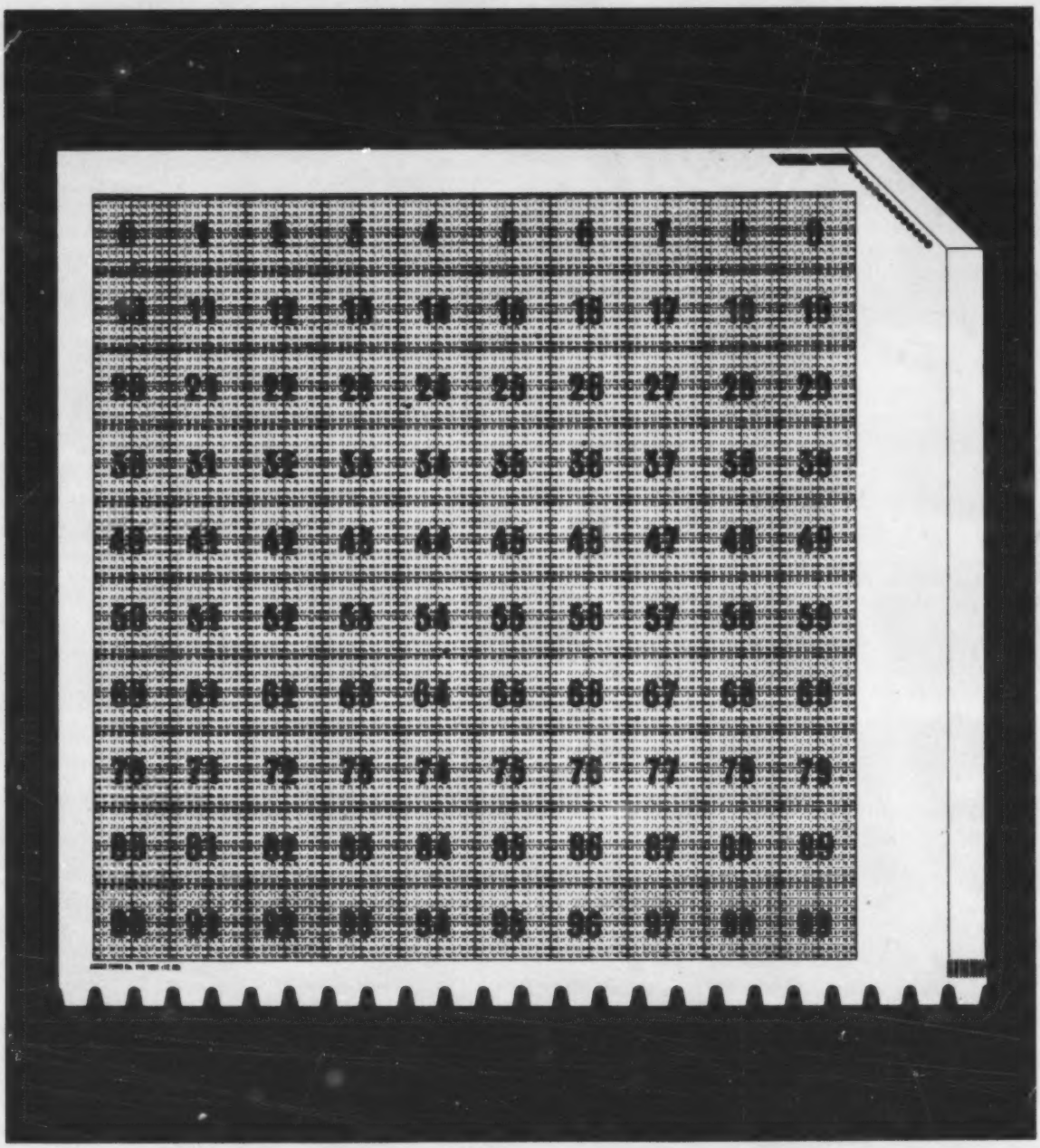
We have described a number of what we call "interfaces" between the user and the system which, perhaps, may be more easily understood as points of difficulty or decision making on the part of the user of the system.





If one looks at the above diagram it can be seen that there is no optimum heuristic for consulting the system. The best path depends on the type of user, the needs of the user, and the services available. Points of particular difficulty for a student may be availability of materials for copying; availability of viewers; ability to use the index system; finding a quiet place to work. The staff user may have very different difficulties which could possibly be the identification of very specific items. We have also discovered that it is not enough to arrange to have a staff member on duty to help students, as his usefulness is affected by various factors such as his response to a query and the quality of the suggestions which he makes. One point about an involved system such as this, or indeed the system in any other resources centre, is that the possible causes of failure are numerous and not always obvious. Any failure can cause rejection of the system by the user.

Finally, in looking towards the future, we ask the question "In what way can such a system grow?". Well, in terms of internal growth the volume of material grows as the interest generated by the system develops and this is, indeed, happening. We have a variety of methods of feeding the system, some happening almost automatically, others requiring a very conscious act of will. We use commercial sources rather more than hitherto, and we now have a firm which will carry out the microfiche filming and produce and cut the cards for us. In terms of cost-effectiveness it can be proved that most commercial services are cheaper to use than highly paid teachers. Much false accounting seems to go on and does not take in the true cost of using teacher labour when assessing what a system will cost to run. As facilities exist for the reproduction of microfiche and the cards on which they are mounted, it would be viable for a group of schools to work together and exchange material. That material could then be used more cheaply than the present full size copy systems. As the card/fiche system is easy to copy and cheap to post, it is also possible to exchange information internationally as well as intranationally. The main problems with exchanges are in describing material to suit different users in a variety of institutions. We suspect that the reason why more people are not adopting our procedures is not so much the presence of reactionary forces, as the fact that people cannot see these methods as capable of solving their problems and cannot reconcile them with long held opinions and beliefs. For this reason we would not wish to say that we think everybody should adopt our methods but we would certainly like to see more people try them.



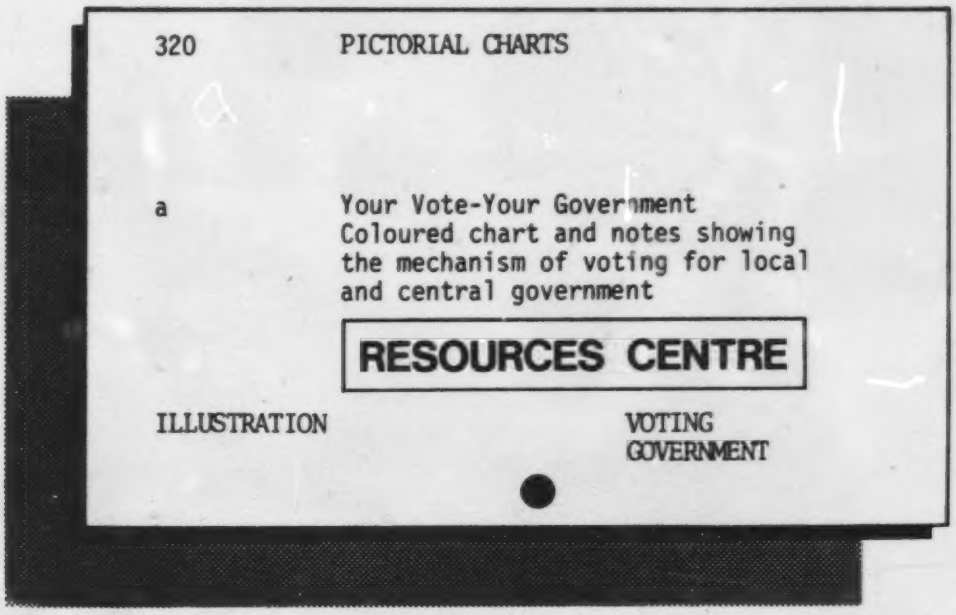
THE DICTIONARY CATALOGUE IN USE AT JOHN SMEATON HIGH SCHOOL, LEEDS

ANNE TROUT

For some years now, teachers and educationalists have realised that school library resources centres are the natural products of a school system based on the philosophy that the quality of a pupil's learning experience is as important as the quantity of knowledge he acquires as a result of that learning experience. If the pupil's quest for information is to be through the medium of heuristic study, facilities must be made available for him to learn in this way. This means that not only has the library resources centre the task of gathering as much information as possible in all types of formats but also — and this is probably more important — it must have an efficient system of indexing that material to ensure that the pupil or any other user can trace all the information which will be of use to him in his course of study, and can trace it as quickly and easily as possible.

At the John Smeaton High School, Leeds, we have been involved in library resources centre planning ever since the school opened in 1970, with the intention of using resource-based teaching as an integral part of the school curriculum. We have had the unenviable experience of having to plan twice, since our original centre was burnt down in April 1974 and is being rebuilt at present. We have been able to profit from our early mistakes, but one area of planning in which we felt that the right decision had been taken originally was that of indexing. We have a retrieval system using 5" x 3" cards. It is a dictionary catalogue[1] catering for book and non-book materials.

Although the books are located separately from the non-book material, we use one catalogue for all items, as the two divisions of the Centre are in adjacent areas. We felt that one of the main aims in setting up the resources centre was that of ensuring that all users approached the centre searching for information, rather than came looking for "a book" and then going to play "a tape". By putting all the information about all the material into one catalogue we hoped to discourage a separatist attitude and to help the centre to grow into an integrated whole.



1 EDITOR'S NOTE

Dictionary catalogue: "A catalogue of entries under authors, editors, translators, etc., titles, subjects, forms and series which, together with the necessary references, are arranged in one general alphabet sequence. It may be regarded as consisting of an author catalogue, a title catalogue, an alphabetical subject catalogue and a form catalogue consolidated in one alphabetical file.

Ease of consultation is assured by the use of alphabetical arrangement, though the sub-arrangement under a subject heading or an author's name may vary from the strictly alphabetical.

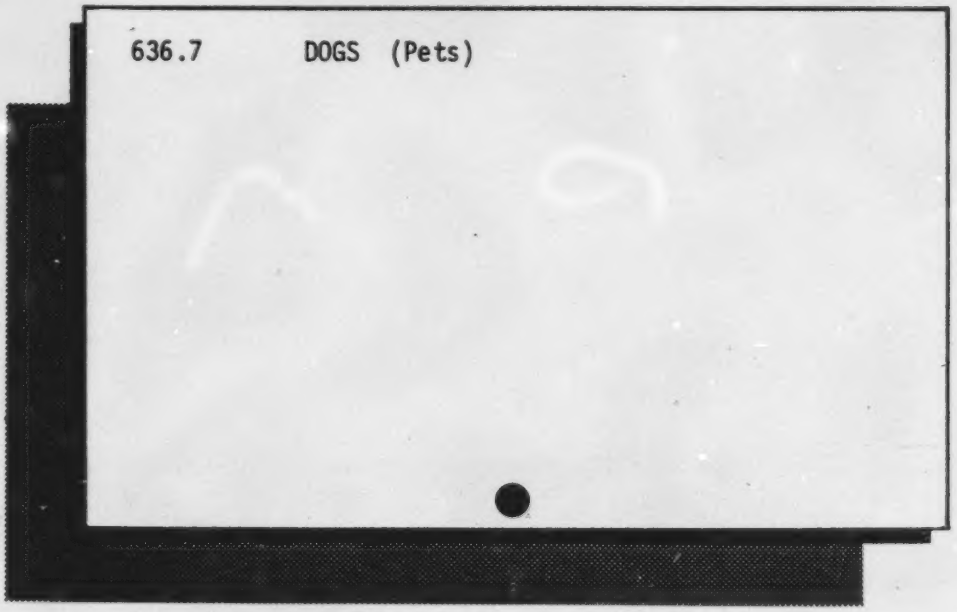
In comparison with the fully-indexed classified catalogue, the dictionary catalogue is simpler to use, the arrangement easier to understand and is more particularly suited to quick reference under specific subjects than systematic perusal of subject representation in the library's stock."

Abbreviated extract from: Encyclopaedia of Librarianship. London. Bowes. 1966.

As far as possible, all items are shelved in Dewey order. Media are in the Resources Centre and books are in the library. Charts are kept in Dewey order in plan chests. Keeping the material in Dewey order makes the search for information easier, as it encourages the attitude of seeing all information as information, whatever its form. It would be more convenient if all the items were in one sequence, but the proximity of the two areas means that separation is not too much of an obstacle, and the approach through the dictionary catalogue seems to work reasonably well. In selecting the system to be used, we had to bear in mind that the library resources centre would be used by adults as well as by pupils, because we are a Community School open to the public for evening classes and other activities. Since the library resources centre, like the rest of the school's amenities, was to be available for use by members of the surrounding community, library policy had to ensure that all users of the centre were served equally well. The system for retrieval had to be chosen with this in mind, and because of the long hours when the library resources centre would be available, it had to be a system which did not require the continuous presence of the librarian. It also had to be easy to operate and to give fairly quick access to the information sought by any user.

If the users of the system varied tremendously, so did the needs they expected the library resources centre to satisfy. The demands made on the centre ranged from the esoteric demands of the researcher trying to find out all he could about a famous local family to the evening student who had just taken up flower arranging and who thought that a set of slides of arrangements could help her. The retrieval system obviously had to be comprehensive without being too complicated and even though there are many different types of user, pupils outnumber all other users, and their motivation flags if we cannot meet their needs.

Another consideration to bear in mind when deciding on the most suitable retrieval system is that a piece of information can be approached in many ways. If the library is to function properly, the system should be able to trace information through almost any approach, since any library resources centre is only as good as its retrieval system. At the John Smeaton High School, the most usual approach is the individual query which begins "Have you anything about . . ." and the Dictionary Catalogue, provided it is carefully maintained, is well able to satisfy such demands. The user with this approach who is looking for information about "Dogs" will simply go to the alphabetical catalogue, Drawer D, and find that all media with a reasonable amount of information about dogs are indexed on a series of cards at the same point in the catalogue thus :–



F DOGS

a B.B.C. Listening and Writing.
The dog that bit people, by James Thurber.
B.B.C. Autumn 1974.
Tape 1¾ 20 mins.

RESOURCES CENTRE

TAPE

636.7 DOGS

a CASPERZ, Dorothy.
The Popular Scottish Terrier.
Popular Books 1956.

636.7 DOGS

a COUSENS, Frederick W.
Dogs and their management.
Routledge & Kegan Paul 1946.

636.7 DOGS

a LAMPSON, S.M.
The Observer's Book of Dogs.
Warne 1966.
2 copies.

629.19 DOGS

a PICTORIAL EDUCATION.
Space Probe 5. Into Space.
Colour Chart.
Reverse side: Dogs A History of.
Dogs as Domestic Animals. B/W Chart.
Pictorial Education May 1973.

RESOURCES CENTRE

ILLUSTRATION

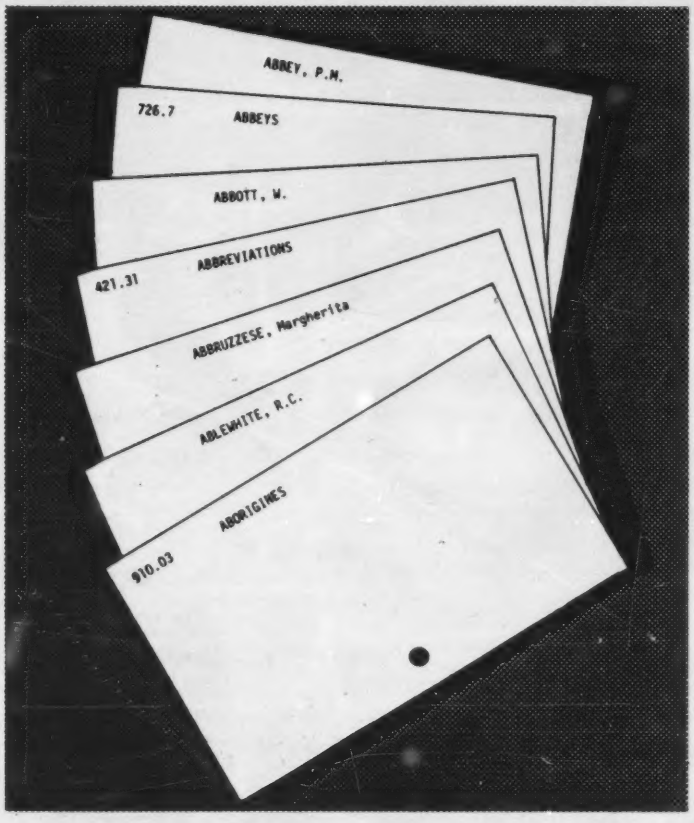
The user can then determine that the main number for Dogs is 636.7 for all media, and that the items with that number should be together on either the Library shelf or the Resources Centre shelf. They can see the format of the available information and where to find it; and that some other information is shelved in another place. If they want a story about dogs — perhaps if they were doing some creative writing — they would find it useful that fiction is also indexed by subejct.

The criticism that the Dictionary catalogue, using the Dewey scheme of classification, is not a valid scheme for non-book material is patently unjustified since the scheme is based on the subject matter of the item to be indexed and can be applied equally well to any type of format. Audiovisual material can require a greater number of cards to cover the topics in the material, as non-book material seems to be of a multi-faceted nature more often than the single subject book, but the scheme is still perfectly workable, if slightly more time-consuming. The integration of collections of books and non-book material is very important if we are to have a true resources centre, and for me the integration starts at the beginning of the process of using the library — with the catalogue.

Perhaps I have spent too much time on vindication of the use of the system for satisfying demands made by subject, but I feel quite strongly that since most school resources centres are there to serve the pupils of the school, it has to be borne in mind that this is the most common way in which children approach their research, and the retrieval system chosen should be designed, primarily, to satisfy this approach.

Sometimes there will be a request for a particular item, either through the author/originator of the work, or by its title, or occasionally by the method some teachers use — "You had a good BBC radiovision programme about Africa . . . or was it Asia . . . well, anyway, where can I find it?" which is, essentially, an approach through format. If the material needs to be traced through the author/originator, there are no problems because the author sequence is integrated in the catalogue.

A typical string of headings on successive cards would be something like this :–



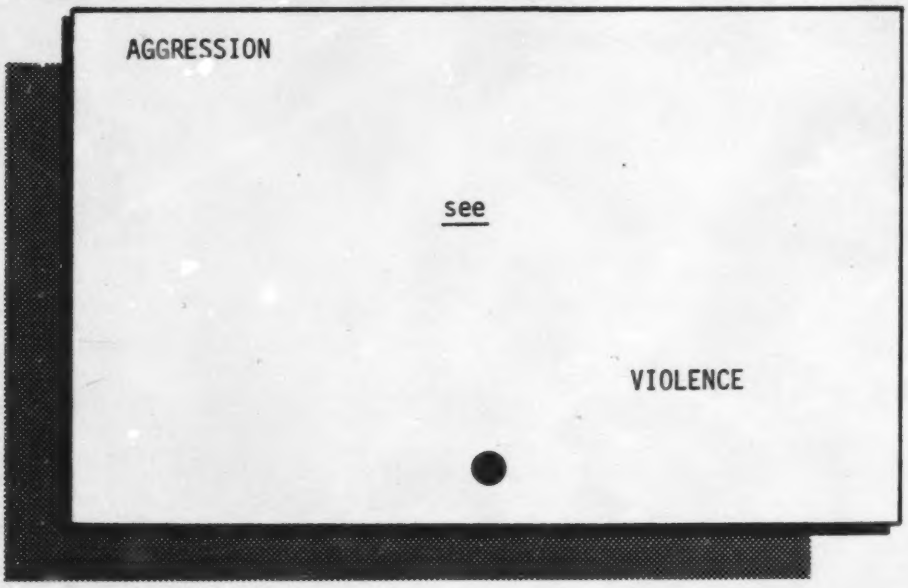
One of the advantages is that the same skill — that is, knowing the order of the alphabet — is needed for both approaches, and for all formats. We do not have a title sequence in the catalogue —as is usual for most dictionary catalogues — because we found that it was rarely used, and we felt confident enough to discard it. The approach through format — the teacher instanced above, or the pupil wanting a picture of a butterfly or a set of slides of the school — can be met, but admittedly this takes longer than the more straightforward queries. If the pupil knows what he wants a picture of, then he can look under that subject to see what information we have on the topic. If some of the information on "Butterflies" is in the form of an illustration, the card will show that fact.

In our school, the librarian has always been responsible for the administration of the library resources centre and so has had to anticipate future demands in terms of types of stock, amount of stock and how much use would be made of that stock in future years. When the school opened it was for eleven-year-old children who would move up the school, until eventually, they would be the sixth form. Now we have pupils from thirteen upwards and our first upper sixth was formed in September 1975. The level of need for the library resources centre has changed accordingly and we have had to anticipate the demands by examination pupils at all levels as well as those by the less academic, whose right to use the library is equal to that of any other type of pupil.

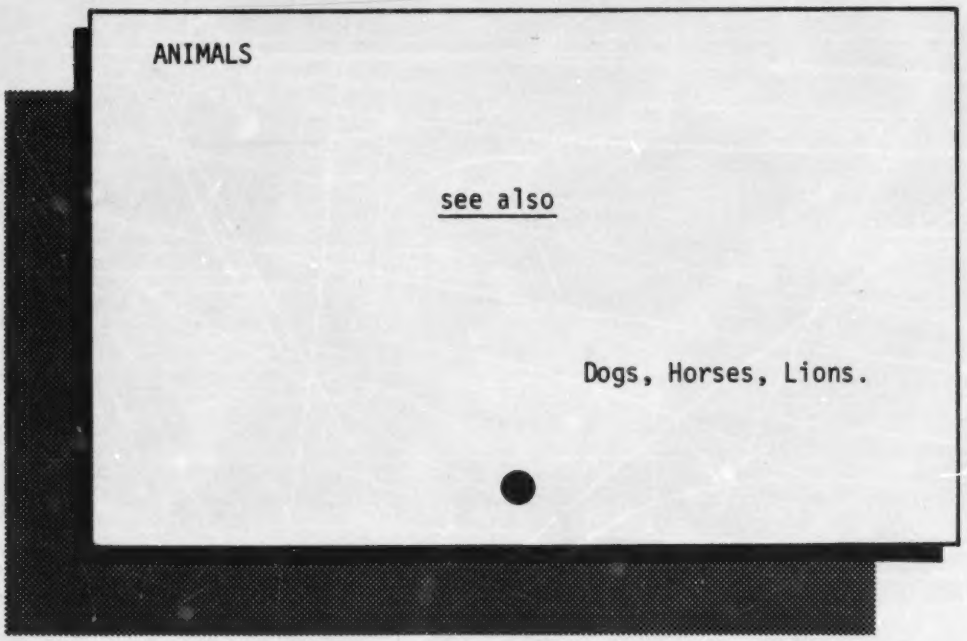
The library resources centre is now used constantly by those wishing to study quietly, by those who have been allowed in to do project work, or by those who are simply browsing through the material out of interest. The system has to function properly on all levels, and provide facilities for all the different uses customers find for it. We have seating for forty people studying in the library area, and space for about twenty people using equipment in the resources area. Equipment — overhead projector, tape recorder, cassette recorder, slide/filmstrip projector — is available in the resources area for immediate use, but books and software can be borrowed and taken to another area of the school if the pupils prefer to do this. The system has to be flexible when one realises all the limitations imposed on such a venture. Space is never sufficient to meet the demand.

Once the limitations of the centre are realised, and the volume and type of need is assessed, the main aim of the staff connected with the centre is to see how the needs can be met within the options open to them. To be more specific, one has to envisage exactly what queries will be put to the librarian or teacher in the centre. The point has already been made that individual queries are the most common.

In compiling the retrieval system, one has to bear in mind that, however flexible the system itself is to be, the rules for indexing have to have a certain amount of rigidity to ensure uniformity of indexing. When making subject entries for the material, a Thesaurus of used terms must be referred to so that two (or more) different terms are not used for the same topic. Our Thesaurus currently has 1500 used terms including references from unused terms which have been entered in the catalogue. By adhering strictly to this procedure, one can make sure that a pupil is guided from the heading "Aggression" (an unused term) by a "see" reference :-

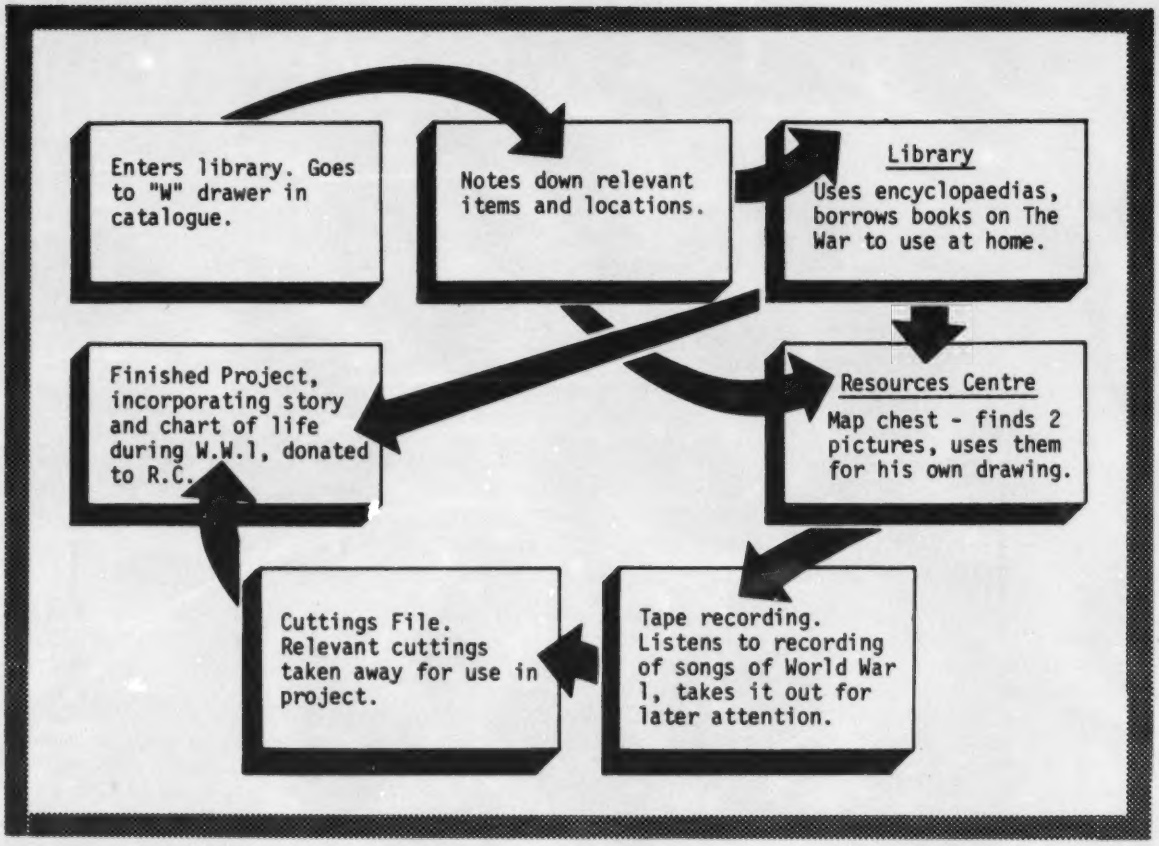


– to the used term "Violence". This ensures that a pupil using either approach to his topic will find the relevant material. It also ensures that the material on the same subject is not split under two headings. When choosing subject headings to use in the catalogue the librarian is bound to show a certain amount of subjectivity and so in the compiling of the Thesaurus certain rules for headings are rigidly observed. The heading used in the catalogue is always the most specific heading to describe the catalogued material – a set of slides of Lion families would be found under the catalogue entry "Lions" and not under "Animals". To cope with the more general approach there would also be a card for "Animals" :–



In order to make the catalogue easy to use, and to ensure consistency, the headings used are never inverted. Most people want to find information under "French Revolution" not "Revolution, French". A list of the rules for the dictionary catalogue is kept in the librarian's office so that if there are any staff changes, the system will continue as before without too much difficulty.

I cannot stress too strongly that if the library resources centre is to function properly, particularly in a sprawling establishment like the modern comprehensive school, the indexing system has to be the one most suitable for that school. The aim of any system should be that it satisfies the demands of the user who wants to know what is available, how useful the material will be, and where to find it as quickly as possible. In our situation, using the index, the user has very few steps from searching for information to using it and would, probably, take the following path :–


Enters library. Goes to "W" drawer in catalogue.
Notes down relevant items and locations.
Library
Uses encyclopaedias, borrows books on The War to use at home.
Finished Project, incorporating story and chart of life during W.W.1, donated to R.C.
Resources Centre
Map chest - finds 2 pictures, uses them for his own drawing.
Cuttings File. Relevant cuttings taken away for use in project.
Tape recording. Listens to recording of songs of World War 1, takes it out for later attention.

Once he has been to the catalogue it is simply a matter of going to the locations he has noted from the catalogue and obtaining his information — there is no extra step involved as in many other systems. In this way, since the knowledge of what material is available and where to find it can be gained in a few minutes, the researcher is using his valuable time in assessing the value of material and not in finding it. Obviously, the system can fail to satisfy if the staff is not numerous enough to maintain it properly or if the staff do not have the skills needed to make the system work efficiently. As has been mentioned, subjectivity can creep in, but there are very few schemes — if there are any — which can be said to eliminate bias completely. We do try to make sure that the only bias which is evident is that of making the system applicable to the school situation — for instance, we do not use any published list of subject headings, but make up our own, generally with the help of the Curriculum headings. To give a local example, we use the Heading "Home Economics" and not "Domestic Science" because that is the school term for that particular discipline.

The library resources centre is expected to back up the curriculum at all levels — from the examination student wanting help with his essay to the younger pupils trying to answer the questions on their worksheets. It has to be available for the remedial child, still learning to read, as well as the young adult who is interested in an outdoor activity or who is just curious. Its role is educational, cultural and recreational in that all queries from any of these three areas should be capable of answer — a library should not be a one-sided institution making it possible for subject department to buy fewer text-books.

As well as making the material available through the catalogue, and lending out the equipment to use the software, the library department publishes a twice-termly bulletin to maintain interest in the library resources area, and to tell users what new material is available. Resources lists are provided on demand, and they can be a very useful part of a child's project pack. When he is given basic information on the topic and a worksheet to complete, the resources list gives him a starting point when looking for more information. When the teacher wants to go through, with his class, the material which is available, suitable project boxes can be made up and loaned to that member of staff for the duration of the project.

The library resources centre also satisfies another basic need — it provides the equipment to produce resources. These are available in the resources centre for use by any member of staff. At the moment, our home-produced material is mainly print-based — e.g. worksheets, stencils, a weekly magazine — but we hope in the future to produce our own slide sets, tape/slide sets and home-made "Jackdaws". We are already competent in recording and playing back off-air sound and video programmes but would like one day to have the opportunity to make our own video programmes. We have learned that the work in a resources centre can never be finished completely — enthusiasm carries one away as each area of development is completed and one realises the potential of other areas. The work done by the centre becomes more and more comprehensive — already we lend books and software as well as equipment, arrange for the repair of hardware, make available duplicators and copiers and maintain them and create some of our own resources, as well as carrying out all the normal functions of a medium-sized public library.

It is, essentially, a supportive agency in that it provides, for all teachers and all pupils, access to equipment and information to help both the teaching and learning processes. This is very important in a school with a flexible curriculum such as ours, and we feel that if there is to be real communication between the teaching staff and the supportive agency, it is essential that the librarian be involved in the curriculum planning activities. In our school, the Academic Board is the body responsible for curriculum planning, and the librarian is automatically a member of that body.

The necessity for communication will be realised, as we have a twelve-form entry and, with the exception of the Modern Languages Department, carry out on streaming. Most of the classes are mixed-ability. We have a system of free options, although all pupils take Mathematics and English, and the curriculum depends very largely on resource-based learning.

It is very difficult to assess how well the system is working, since the fire in 1974 more or less destroyed our resources, and we are building up our former stock only gradually. Luckily we retained the goodwill of teachers and pupils who had found the resources centre useful. At the moment, the centre is working, to the extent that what information is available can be found quickly and easily; equipment is always available; and the library staff are always willing to ensure that users obtain the maximum benefit from the resources. However, the staff of the centre still have enthusiasm for what is for them — and for the second time — something new and different although the staff and pupils have taken it for granted since the fire. As it is rare for any school to be able to have the staffing necessary for a library resources centre to be run as efficiently as possible, our disadvantages will probably be mirrored in most schools in the country in that we could do so much more if more people with different skills were made available. We have a teacher and two librarians, with part-time (and very valuable) help from the workshop technician, but even so, every scheme which we consider when planning future services has to be re-thought in terms of the members of staff and the money we have available. The limitations imposed on a growing system can be very frustrating.

Nevertheless, with time and enthusiasm so much can be achieved that it would be wrong to discourage anyone wishing to start such a venture. Problems can be aired, and sometimes solved, and if one makes a few mistakes along the way, at least others can benefit from them. If our system can withstand complete erasure and still be a necessary part of the school, it is obviously not a fashionable fad, but a valuable part of the educational system. I hope that our work in this field will encourage other pioneers.

Miss Trout is now librarian at John Bosco School, Leeds.

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